

FAMILY EMERGENCY PREPAREDNESS GUIDE

May



INTRODUCTION

CEMA is an acronym for the Chatham Emergency Management Agency which is the department of the County government that is responsible for preparing for and responding to major emergencies and both natural and manmade disasters. The EMA mission is through community-wide leadership and guidance, to protect lives and property from the threat of all types of contingencies.

Both the public and private business and industry community are proven partners in providing an educated community with the tools they require to prepare for and respond to both natural disasters and man-made emergencies. It is through partnerships such as these that the citizens of our County are provided with well coordinated services and comprehensive plans to increase their awareness of and preparedness for emergencies and disasters.

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DISASTER PLANNING FAMILY

Disaster can strike quickly and without warning and can force you to evacuate your neighborhood or confine you to your home. What would you do if basic services-- water, gas, electricity or telephones--were cut off? Local officials and relief workers will be on the scene after a disaster, but they cannot reach everyone right away.

Families can and do cope with disaster by preparing in advance and working together as a team. Knowing what to do is your best protection and your responsibility.

Awareness Information

A NOAA Weather Radio with a tone-alert feature is the best means to receive warnings from the National Weather Service (NWS). The NWS continuously broadcasts updated weather warnings and forecasts that can be received by NOAA Weather Radios, which are sold in many stores. NOAA Weather Radio now broadcasts warning and post-event information for all types of hazards both natural such as weather and flooding and technological such as chemical releases or oil spills. Working with other Federal agencies and the Federal Communications Commission's Emergency Alert System, NOAA Weather Radio is an "all hazards" radio network, making it the single source for the most comprehensive weather and emergency information available to the public. The NWS recommends purchasing a NOAA Weather Radio that has both a battery backup and a Specific Area Message Encoder (SAME) feature, which automatically alerts you when a WATCH or WARNING is issued for your county, giving you immediate information about a life-threatening situation.

- A NWS WATCH is a message indication that conditions favor the occurrence of a certain type of hazardous weather. For example, a severe thunderstorm WATCH means that a severe thunderstorm is expected in the next six hours or so within an area approximately 120 to 150 miles wide and 300 to 400 miles long. The NWS Storm Prediction Center issues such watches. Local NWS forecast offices issue other watches (flash flood, winter weather, etc.) 12 to 36 hours in advance of a possible hazardous-weather or flooding event.
- An NWS WARNING indicates that a hazardous event is occurring or is imminent in about 30 minutes to an hour. Local NWS forecast offices issue warnings on a county-by-county basis.

Step 1. Identify Hazards

Identifying the hazards that threaten you and your family is the first step in any effort to reduce vulnerability. Hazard identification determines which areas within the community are affected by disasters, how likely it is that a disaster may occur and how intense the disaster might be.

Although coastal counties may be subject to a variety of hazards, not all neighborhoods face all the threats, or even the same level of threat intensity. For example, while barrier islands and low-lying coastal areas may be subject to hurricane storm surge, a far greater threat to the downtown historic district may be from structural fires.

While national security and civil unrest are certainly preparedness concerns, more probable threats and hazards exist from climate and technology. List the hazards that may affect the neighborhood in which you and your family live and work or go to school; the following types of threats should be considered:

MANMADE

Hazardous Materials Accidents
Fires

Residential
Wildfires

Thunderstorms

NATURAL

Floods
Hurricanes
Tornadoes

Review existing as well as historical hazard information in your area of influence:

- What has happened in the past?
- Have changes occurred to alter historical patterns, such as the construction of levees, drainage projects, establishment of new industry or transportation corridors.
- Does the hazard still pose a threat to the area?
- Are new hazards present?
- Can the hazard be compounded by another threat?

Step 2: Profile Hazards

Consider the following information about each hazard:

- Frequency of occurrence-how often is it likely to occur.
- Magnitude and potential intensity-how bad can it get?
- Location-where is it likely to strike.
- Probable spatial extent-how large an area is it likely to effect.
- Duration-how long can it be expected to last?
- Seasonal pattern-time of year during which it is more likely to occur.
- Speed of onset-how fast is it likely to occur.
- Availability of warnings-is there a system, how much warning can be expected.

Step 3: Develop A Neighborhood Profile

Combine the information from steps 1 and 2 with the following information pertaining specifically to your neighborhood:

- Geography-coastlines, tidal marsh, creeks, rivers, woodlands, etc., that relate to disaster occurrence or response efforts.

- Property-characteristics such as land use, type construction, manufactured homes, and secondary hazards such as nearby chemical storage facilities.
- Infrastructure-utilities, communications system, major highway transportation routes such as bridges and bus routes.
- Demographics-population size, distribution and concentrations, animal populations.
- Response agencies-locations, facilities, services and resources available.

Step 4: Prioritize Risk

Risk is the predicted impact that a hazard will have on the people, services, facilities and structures in the area evaluated.

Review your vulnerability to the hazards that you have considered. Quantify the risk to your home and family and prioritize the threats that should receive your highest attention. Follow the subsequent steps and base your response plan on the actions that will be required under each condition that threatens you, your family or your home.

Step 5: Create A Plan

Once you know what disasters are possible in your area, consider how to prepare and respond if one occurs. As you discuss this information with your family, make checklists of steps you can take. Here is how to create your Family Disaster Plan:

- Meet with your family and discuss why you need to prepare for disaster. Explain the dangers of fire and severe weather to children. Plan to share responsibilities and work together as a team. Keep it simple enough so people can remember the important details. A disaster is an extremely stressful situation that can create confusion. The best emergency plans are those with very few details.

- Discuss the types of disasters that are most likely to happen. Explain what to do in each case. Everyone should know what to do in case all family members are not together. Discussing disasters ahead of time will help reduce fear and anxiety and will help everyone know how to respond.
- Pick two places to meet:
 - Right outside of your home in case of a sudden emergency, like a fire.
 - Outside of your neighborhood in case you can't return home or are asked to leave your neighborhood. Everyone must know the address and phone number of the meeting locations.
- Develop an emergency communication plan. In case family members are separated from one another during floods or other disasters, have a plan for getting back together. Separation is a real possibility during the day when adults are at work and children are at school.
- Ask an out-of-town relative or friend to be your "family contact." Your contact should live outside of your area. After a disaster, it is often easier to make a long distance call than a local call. Family members should call the contact and tell him or her where they are. Everyone must know the contact's name, address, and phone number.
- Discuss what to do if authorities ask you to evacuate. Make arrangements for a place to stay with a friend or relative who lives out of town and/or learn about shelter locations.
- Be familiar with escape routes. Depending on the type of disaster, it may be necessary to evacuate your home. Plan several escape routes in case certain roads are blocked or closed. Remember to follow the advice of local officials during evacuation situations. They will direct you to the safest route; some roads may be blocked or put you in further danger.

- Plan how to take care of your pets. Other than service animals, pets are not permitted in places where food is served. Plan where you would take your pets if you had to go to a public shelter.
- Working with neighbors can save lives and property. Meet with your neighbors to plan how the neighborhood could work together after a disaster until help arrives. If you're a member of a neighborhood organization, such as a home association or crime WATCH group, introduce disaster preparedness as a new activity. Know your neighbors' special skills (e.g., medical, technical) and consider how you could help neighbors who have special needs, such as disabled and elderly persons. Make plans for childcare in case parents can't get home.
- See if you can help a neighbor or a friend that may not have transportation. Team up with a "partner" a neighbor or a friend living nearby, to plan your evacuation together. By sharing supplies and a ride, each of you can help the other.

Step 6: Develop Checklists

Take the steps outlined in the checklists you made when you created your Family Disaster Plan. Remember to include the following items on your checklists.

- Post emergency telephone numbers by your phones (fire, police, ambulance, etc.) You may not have time in an emergency to look up critical numbers.
- Teach all responsible family members how and when to turn off the water, gas, and electricity at the main switches or valves. Keep necessary tools near gas and water shut-off valves. Turn off utilities only if you suspect a leak or damaged lines, or if you are instructed to do so by authorities. If you turn the gas off, you will need a professional to turn it back on. Paint shut-off valves with white or fluorescent paint to increase visibility. Attach a shut-off valve wrench or other special tool in a conspicuous place close to the gas and water shut-off valves.

- Check if you have adequate insurance coverage. Ask your insurance agent to review your current policies to ensure that they will cover your home and belongings adequately. Homeowner's insurance does not cover flood losses. If you are a renter, your landlord's insurance does not protect your personal property; it only protects the building. Renters' insurance pays if a renter's property is damaged or stolen. Renters' insurance costs less than \$15 a month in most areas of the country. Contact your insurance agent for more information.
- Conduct a home hazard hunt. During a disaster, ordinary objects in your home can cause injury or damage. Anything that can move, fall, break, or cause a fire is a home hazard. For example, during an earthquake or a tornado, a hot water heater or a bookshelf could turn over or pictures hanging over a couch could fall and hurt someone. Look for electrical, chemical, and fire hazards. Contact your local fire department to learn about home fire hazards. Inspect your home at least once a year and fix potential hazards.
- Stock emergency supplies and assemble a Disaster Supply Kit. (See the "Disaster Supply Kit" Annex.) Keep enough supplies in your home to meet your needs for at least three days. Assemble a Disaster Supply Kit with items you may need in case of an evacuation. Store supplies in sturdy, clearly labeled, easy-to-carry containers.
- Keep a smaller Disaster Supply Kit in the trunk of your car. (See the "Disaster Supply Kit" Annex.) If you become stranded or are not able to return home, these items will help you to be more comfortable.
- Keep a portable, battery-operated radio or television and extra batteries. Maintaining a communications link with the outside is a step that can mean the difference between life and death. Make sure that all family members know where the portable, battery-operated radio or television is located, and always keep a supply of extra batteries.

- Consider using a NOAA Weather Radio with a tone alert feature; this is the best means to receive WATCHES and WARNINGS from the NWS.
- Take Red Cross first aid and CPR classes. Have your family learn basic safety measures, such as CPR and first aid.
- Plan home escape routes. Determine the best escape routes from your home in preparation for a fire or other emergency that would require you to leave the house quickly. Find two ways out of each room.
- Find the safe places in your home for each type of disaster. Different disasters often require different types of safe places. While basements are appropriate for tornadoes, they could be deadly in a major chemical emergency.
- Make two photocopies of vital documents and keep the originals in a safe deposit box. Keep one copy in a safe place in the house, and give the second copy to an out-of-town friend or relative. Vital documents such as birth and marriage certificates, tax records, credit card numbers, financial records, and wills and trusts can be lost during disasters.
- Make a complete inventory of your home, garage, and surrounding property. The inventory can be either written or videotaped. Include information such as serial numbers, make and model numbers, physical descriptions, and price of purchases (receipts, if possible). This list could help you prove the value of what you owned if your possessions are damaged or destroyed and can help you to claim deductions on taxes. Be sure to include expensive items such as sofas, chairs, tables, beds, chests, wall units, and any other furniture too heavy to move. Do this for all items in your home, on all levels. Then store a copy of the record somewhere away from home, such as in a safe deposit box.

Step 7: Practice and Maintain The Plan

Practicing your plan will help you instinctively make the appropriate response during an actual emergency. You

will need to review your plan periodically and you may need to change some parts.

- Quiz your kids every six months so they remember what to do, meeting places, phone numbers, and safety rules.
- Conduct fire and emergency evacuation drills at least twice a year. Actually drive evacuation routes so each driver will know the way. Select alternate routes in case the main evacuation route is blocked during an actual disaster. Mark your evacuation routes on a map; keep the map in your Disaster Supply Kit. Remember to follow the advice of local officials during evacuation situations. They will direct you to the safest route, away from roads that may be blocked or put you in further danger.
- Replace stored food and water every six months. Replacing your food and water supplies will help ensure freshness.
- Install smoke alarms on each level of your home, especially near bedrooms. Smoke alarms cut nearly in half your chances of dying in a home fire. Smoke alarms sense abnormal amounts of smoke or invisible combustion gasses in the air and can detect smoldering and flaming fires. Many areas now require hard-wired smoke alarms in new homes.
 - Use the test button to test your smoke alarms once a month. This feature tests all electronic functions and is safer than testing with a controlled fire (matches, lighters, or cigarettes). If necessary, replace batteries. Make sure children know what your smoke alarm sounds like.
 - If you have battery-powered smoke alarms, replace batteries at least once a year. Some agencies recommend you replace batteries when the time changes from standard daylight savings each spring and again in the fall. "Change your clock, change your batteries," is a positive theme and has become a common phrase. While replacing batteries this often certainly will not hurt, available data show that batteries will last at least

a year, so more frequent replacement is not necessary.

- Replace your smoke alarms every 10 years. Smoke alarms become less sensitive over time. Replacing them every 10 years is a joint recommendation by the National Fire Protection Association and the US Consumer Products Safety Commission.
- Get training from the fire department on how to use your fire extinguisher and show family members where extinguishers are kept. Different extinguishers operate in different ways. Unless responsible family members know how to use your particular model, they may not be able to use it effectively. There is no time to read directions during an emergency. Only adults should handle and use extinguishers.
- Periodically check your fire extinguisher to ensure it is properly charged. Fire extinguishers will not work properly if they are not properly charged. Use the gauge or test button to check proper pressure. Follow manufacturer's instructions for replacement or recharging fire extinguishers. If the unit is low on pressure, damaged, or corroded, replace it or have it professionally serviced.

Step 8: What to Tell Children

Tell children that a disaster is something that happens that could hurt people, cause damage, or cut off utilities such as water, telephones, or electricity. Explain to them that nature sometimes provides "too much of a good thing"--fire, rain, wind, snow. Talk about typical effects that children can relate to, such as loss of electricity, water, and telephone service.

- Give examples of several disasters that could happen in your community. Help children recognize the warning signs for the disasters that could happen in your community. Discussing disaster ahead of time reduces fear and anxiety and lets everyone know how to respond.

- Teach children how and when to call for help. Check the telephone directory for local emergency telephone numbers. Teach children to call 9-1-1. At home, post emergency telephone numbers by all phones and explain when to call each number. Even very young children can be taught how and when to call for emergency assistance. If a child can't read, make an emergency telephone number chart with pictures that may help the child identify the correct number to call.
- Explain that when people know what to do and practice in advance, everyone is better able to handle emergencies. That's why you need to create a Family Disaster Plan.
- Have older children take a first aid and CPR course. These are critical skills, and learning can be a fun activity.
- Tell children that in a disaster there are many people who can help them. Talk about ways that an emergency manager, Red Cross volunteer, police officer, firefighter, teacher, neighbor, doctor, or utility worker might help following a disaster.
- Teach children to call your family contact in case they are separated from the family in an emergency. Help them memorize the telephone number, or write it down on a card that they can keep with them.

Step 9: Evacuation

Evacuate immediately if told to do so. Authorities do not ask people to leave unless they truly feel lives may be in danger. Follow their advice.

- Listen to local radio or television and follow the instructions of local emergency officials. Local officials will provide you with the most appropriate advice for your particular situation.
- Lock your home by securing your house as you normally would when leaving for extended periods.
- Use travel routes specified by local authorities. Don't use shortcuts because certain areas may be impassable or dangerous.

- If you have only moments before leaving, grab the following items and go:
 - First aid kit, including prescription medications, dentures, extra eyeglasses, and hearing aid batteries.
 - Disaster Supply Kit basics and Evacuation. (See Disaster Supply Kit and Evacuation Annexes for detailed information.)
 - A change of clothes and a sleeping bag or bedroll and pillow for each household member.
 - Car keys and keys to the place you may be going such as a friend or relative's home.
- If you're sure you have time and if local officials haven't advised an immediate evacuation, but there's a chance the weather may get worse or flooding may happen, take steps to protect your home and belongings.
- Bring all pets into the house and confine them to one room, if you can. If necessary, make arrangements for your pets. Pets may try to run if they feel threatened. Keeping them inside and in one room will allow you to find them quickly if you need to leave. If evacuation is ordered, take your pets! They will have no more chance of survival than you will if you fail to evacuate.
- Put your Disaster Supply Kit basics and Evacuation Supply Kit (see Annexes) in your vehicle, or by the door if you may be leaving on foot.
- Notify your family contact where you are going and when you expect to get there. Relatives and friends will be concerned about your safety. Letting someone know your travel plans will help relieve the fear and anxiety of those who care.
- Bring things indoors. Lawn furniture, trash cans, children's toys, garden equipment, clotheslines, hanging plants, and any other objects that may be blown around or swept away should be brought indoors.
- Look for potential hazards. If you have not already cut away dead or diseased branches or limbs from trees

- and shrubs, leave them alone. Local rubbish collection services will not have time before the storm to pick anything up.
- If you turn gas off, a licensed professional is required to turn it back on, and it may take weeks for a professional to respond.
- Turn off propane gas service. Propane tanks often become damaged or dislodged in disasters.
- If strong winds are expected, cover the outside of all the windows of your home. Use shutters that are rated to provide significant protection from windblown debris, or pre-fit plywood coverings over all windows.
- If flooding is expected, consider using sand bags to keep water away from your home. It takes two people about one hour to fill and place 100 sandbags, giving you a wall one foot high and 20 feet long. Make sure you have enough sand, burlap, or plastic bags, shovels, strong helpers, and time to place them properly.

Step 10: During A Disaster

- Remain calm and put your plan into action.
- Check for injuries.
- Give first aid and get help for seriously injured people.
- Listen to your battery powered radio for news and instructions.
- Evacuate if advised to do so. Wear protective clothing and sturdy shoes.

Step 11: After A Disaster

- Remain calm and patient. Staying calm and rational will help you move safely and avoid delays or accidents caused by irrational behavior. Many people will be trying to accomplish the same things you are for their family's safety. Patience will help everyone get through a difficult situation more easily.
- Put your plan into action. Having specific steps to take will keep you working toward your family's safety.

- Listen to local radio or television for news and instructions. Local authorities will provide the most appropriate advice for your particular situation.
- Give first aid and get help for seriously injured people. Taking care of yourself first will allow you to help others safely until emergency responders arrive.
- Help your neighbors who may require special assistance--infants, elderly people, and people with disabilities--and the people who care for them or for large families who may need additional help in an emergency situation.
- Wear protective clothing and sturdy shoes. Disaster areas and debris contain many hazards. The most common injury following disasters is cut feet.
- Use battery-powered lanterns or flashlights when examining buildings. Battery-powered lighting is the safest and easiest and does not present a fire hazard for the user, occupants, or building.
- Candles can easily cause fires; they are quiet and easily forgotten. They can tip over in a gust of wind. Candles invite fire play by children.
- Look for fire hazards such as broken or leaking gas lines, flooded electrical circuits, or submerged furnaces or electrical appliances. Fire is the most frequent hazard following floods.
- Check for gas leaks. Sniff for gas leaks, starting at the water heater. If you smell gas or suspect a leak, open a window and get everyone outside quickly. Turn off the gas at the outside main valve if you can and call the gas company from a neighbor's home. If you turn off the gas for any reason, a professional must turn it back on.
- Look for electrical damage. If you see sparks or broken or frayed wires, or if you smell burning insulation, turn off the electricity at the main fuse box. If you have to step in water to get to the fuse box, call an electrician first for advice. Electrical equipment should be checked and dried before being returned to service.

- Check for sewage and water lines damage. If you suspect sewage lines are damaged, avoid using the toilets and call a plumber. If water pipes are damaged, contact the water company and avoid using water from the tap. You can obtain safe water from undamaged water heaters or by melting ice cubes.
- Clean up spills immediately including medicines, bleach, gasoline, and other flammable liquids.
- Watch for loose plaster and ceilings that could fall.
- For insurance claims, take pictures of both building and content damage.
- Confine or secure your pets. They may be frightened and try to run.
- Let your family contact know you have returned home and then do not use the telephone again unless it is a life-threatening emergency. Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.
- Make sure you have an adequate water supply in case service is cut off. Water is often contaminated after major disasters. An undamaged water heater may be your best source of drinking water.
- Stay away from downed power lines and report them immediately. Getting damaged utilities turned off will prevent further injury or damage. If possible, set out a flare and stay on the scene to warn others until authorities arrive.

NATURAL THREATS FLOODS

Floods are among the most frequent and costly natural disasters in terms of human hardship and economic loss. As much as 90 percent of the damage related to all natural disasters (excluding droughts) is caused by floods and associated debris flows. Most communities in the United States can experience some kind of flooding

What Are Floods?

Floods are great volumes of water occurring over land. Flooding occurs in known floodplains when prolonged rainfall over several days, intense rainfall over a short period of time, or debris jam causes a river or stream to overflow and flood the surrounding area. Severe thunderstorms can bring heavy rain in the spring and summer; or tropical cyclones can bring intense rainfall in the summer and fall.

As land is converted from fields or woodlands to roads and parking lots, it loses its ability to absorb rainfall. Urbanization increases runoff two to six times over what would occur on natural terrain. During periods of urban flooding, streets can become swift moving rivers, while basements and viaducts can become death traps as they fill with water.

Several factors contribute to flooding. Two key elements are rainfall intensity and duration. Intensity is the rate of rainfall, and duration is how long the rain lasts. Topography, soil conditions, and ground cover also play important roles. Most flash flooding is caused by slow-moving thunderstorms, thunderstorms repeatedly moving over the same area, or heavy rains from hurricanes and tropical storms. Floods, on the other hand, can be slow or fast rising, but generally develop over a period of hours or days.

Floods are among the most frequent and costly natural disasters in terms of human hardship and economic loss.

Awareness Information

Know the difference between WATCHES and WARNINGS.

A National Weather Service WATCH is a message indicating that conditions favor the occurrence of a certain type of hazardous weather. For example, a severe thunderstorm WATCH means that a severe thunderstorm is expected in the next six hours or so within an area approximately 120 to 150 miles wide and 300 to 400 miles long (36,000 to 60,000 square miles). Local forecasts usually cover a portion of a state.

An NWS WARNING indicates that a hazardous event is occurring or is imminent in about 30 minutes to an hour. Local NWS forecast offices issue warnings on a county-by-county basis.

Many more WATCHES are issued than WARNINGS. A WATCH is the first sign a flood may occur, and when one is issued, you should be aware of potential flood hazards. Be aware of flood hazards. Floods can tear out trees, destroy buildings and bridges, and scour out new channels. Floodwaters can reach heights of 10 to 20 feet and often carry a deadly cargo of debris. Flood-producing rains can also bring huge amounts of debris.

Regardless of how a flood or flash flood occurs, the rule for being safe is simple: head for higher ground and stay away from floodwaters. Even a shallow depth of fast moving floodwater produces more force than most people imagine. The most dangerous thing you can do is to try walking, swimming, or driving through floodwaters. Two feet of water will carry away most automobiles.

Develop a Family Disaster Plan

See the "Family Disaster Plan" section for general family planning information. Develop flood-specific planning. Learn about your area's flood risk and elevation above flood stage. Call your insurance agent or submit a written request to the County Engineering Department. Knowing the elevation of your property in relation to nearby streams and dams will let you know if forecasted flood levels will affect your home.

Talk to your insurance agent. Homeowners' policies do not cover flooding. Ask about the National Flood Insurance Program (NFIP).

Use a NOAA Weather Radio with a tone-alert feature, or a portable, battery-powered radio or television for updated emergency information.

Develop an evacuation plan; everyone in your family should know where to go if they have to leave. Trying to make plans at the last minute can be upsetting and create confusion.

Discuss floods with your family. Everyone should know what to do in case all family members are not together. Discussing floods ahead of time helps reduce fear and anxiety and lets everyone know how to respond.

What to Tell Children

If you come upon floodwaters, stop, turn around, and go another way. Climb to higher ground. If it is moving swiftly, even water six inches deep can knock you off your feet. Many people are swept away wading through floodwaters, resulting in injury or death.

Stay away from flooded areas. Even if it seems safe, floodwaters may still be rising.

Never try to walk, swim, drive, or play in floodwater. You may not be able to see on the surface how fast floodwater is moving or see holes and submerged debris.

If you are in a vehicle and become surrounded by water, if you can get out safely, do so immediately and move to higher ground. Vehicles can be swept away in two feet of water.

Watch out for snakes in areas that were flooded. Floodwaters flush snakes from their homes.

Stay away from creek and stream banks in flooded and recently flooded areas. The soaked banks often become unstable due to heavy rainfall and can suddenly give way, tossing you into rapidly moving water.

Never play around high water, storm drains, ditches, ravines, or culverts. It is very easy to be swept away by fast moving water.

Throw away all food that has come into contact with floodwaters. Contaminated floodwater contains bacteria and germs. Eating foods exposed to floodwaters can make you very sick.

How to Protect Your Property

Keep insurance policies, documents, and other valuables in a safe-deposit box. You may need quick, easy access to these documents. Keep them in a safe place less likely to be damaged during a flood.

Avoid building in a floodplain unless you elevate and reinforce your home. Some communities do not permit building in known floodplains. If there are no restrictions, and you are building in a floodplain, take precautions to make it less likely that your home will be damaged during a flood.

Raise your furnace, water heater, and electric panel to higher floors or the attic if they are in areas of your home that may be flooded. Raising this equipment will prevent damage. An undamaged water heater may be your best source of fresh water after a flood.

Install check valves in building sewer traps to prevent flood water from backing up into the drains of your home. As a last resort, when floods threaten, use large corks or stoppers to plug showers, tubs, or basins.

Consult with a construction professional for further information if these and other damage reduction measures can be taken. Check local building codes and ordinances for safety requirements.

Assemble a Disaster Supply Kit

Please see the section "Disaster Supply Kit" for general supplies kit information. Flood-specific supplies should include the Disaster Supply Kit basics as well as:

- Evacuation Supply Kit.
- If you live in a frequently flooded area, stockpile emergency building materials. These include plywood, plastic sheeting, lumber, nails, hammer and saw, pry bar, sand, shovels, and sandbags.

What to Do before Flooding Occurs

- Use a NOAA Weather Radio or a portable, battery-powered radio (or television) for updated emergency information. Local stations provide the best advice for your particular situation.
- Listen for distant thunder. In some types of terrain, runoff from a faraway thunderstorm could be headed your way.
- If you are stopping your vehicle, camp or park away from streams and washes, particularly during threatening conditions. Water can rise quickly and carry you or your belongings away.

- If you come upon a flowing stream where water is above your ankles, stop, turn around, and go another way. Never try to walk, swim, or drive through such swift water. Most flood fatalities are caused by people attempting to drive through water, or people playing in high water. If it is moving swiftly, even water six inches deep can sweep you off your feet.

What to Do During a Flood WATCH

- Listen continuously to a NOAA Weather Radio, or a portable, battery-powered radio (or television) for updated emergency information. Local stations provide you with the best advice for your particular situation.
- Everyone in a WATCH area should be ready to respond and act quickly. Floods and flash floods can happen quickly and without warning. Be ready to act immediately.
- Be alert to signs of flooding, and if you live in a flood-prone area, be ready to evacuate at a moment's notice. Floods can happen quickly and you may need to leave with little or no notice.
- Follow the instructions and advice of local authorities. Local authorities are the most informed about affected areas. They will best be able to tell you areas to avoid.
- If your residence is in a flood-prone area:
 - Fill bathtubs, sinks, and plastic bottles with clean water. Water may become contaminated or service may be interrupted.
 - Bring outdoor belongings, such as patio furniture, indoors. Unsecured items may be swept away and damaged by floodwaters.
 - Move your furniture and valuables to higher floors of your home. If floodwaters affect your home, higher floors are less likely to receive damage.
 - If instructed by local authorities, turn off all utilities at the main power switch and close the main gas valve. In some areas, local authorities may advise

- o you to turn off utilities to prevent further damage to homes and the community.
- o Get your pre-assembled disaster supplies ready. You may need to act quickly. Having your supplies ready will save time.
- o Fill your car's gas tank, in case an evacuation notice is issued. If electric power is cut off, gas stations may not be able to operate pumps for several days.
- o Be prepared to evacuate. Local officials may ask you to leave if they truly feel your home is at risk from floodwaters.

What to Do During a Flood WARNING

- Listen continuously to a NOAA Weather Radio, or a portable, battery-powered radio (or television) for updated emergency information. Local stations provide you with the best advice for your particular situation.
- Be alert to signs of flooding. A WARNING means a flood is imminent or is happening in the area.
 - o If you live in a flood-prone area or think you are at risk, evacuate immediately. Move quickly to higher ground. Save yourself, not your belongings. The most important thing is your safety.
 - o Follow the instructions and advice of local authorities. Local authorities are the most informed about affected areas. They will best be able to tell you areas to avoid.
 - o If advised to evacuate, do so immediately. Move to a safe area before access is cut off by floodwater. Evacuation is much simpler and safer before floodwaters become too deep for vehicles to drive through.
 - o Follow recommended evacuation routes. Shortcuts or alternate, non-recommended routes may be blocked or damaged by floodwaters.

- o Leave early enough to avoid being marooned by flooded roads. Delaying too long may allow all escape routes to become blocked.

What to Do If You Are Driving During a Flood

- Avoid already flooded areas, and areas subject to sudden flooding. Do not attempt to cross streams. Most flood fatalities are caused by people attempting to drive through water, or people playing in high water. The depth of water is not always obvious. The roadbed may be washed out under the water, and you could be stranded or trapped. Rapidly rising water may stall the engine, engulf the vehicle and its occupants, and sweep them away. Look out for flooding at highway dips, bridges, and low areas. Two feet of water will carry away most automobiles.
- If you are driving and come upon rapidly rising waters, turn around and find an alternate route. Move to higher ground away from rivers, streams, creeks, and storm drains. If floodwaters or barricades block your route, find another route. Barricades are put up to close unsafe roads; driving around barricades can be a serious risk.
- If your vehicle becomes surrounded by water or the engine stalls, and if you can safely get out, abandon your vehicle immediately and climb to higher ground. Many deaths have resulted from attempts to move stalled vehicles. When a vehicle stalls in the water, the water's momentum is transferred to the car. The lateral force of a foot of water moving at 10 miles per hour is about 500 pounds on the average automobile. The greatest effect is buoyancy--for every foot that water rises up the side of a car, it displaces 1,500 pounds of the car's weight. So, two feet of water moving at 10 miles per hour will float virtually any car. Many persons have been swept away by floodwaters upon leaving their vehicles, which are later found without much damage. Use caution when abandoning your vehicle, and look for an opportunity to move away quickly and safely to higher ground.

What to Do After a Flood

- Seek necessary medical care at the nearest hospital or clinic. Contaminated floodwaters lead to a greater possibility of infection. Severe injuries will require medical attention.
- Help a neighbor who may require special assistance--infants, elderly people, and people with disabilities. Elderly people and people with disabilities may require additional assistance. People who care for them or who have large families may need additional assistance in emergency situations.
- Avoid disaster areas. Your presence might hamper rescue and other emergency operations, and put you at further risk from the residual effects of floods, such as contaminated waters, crumbled roads, landslides, mudflows, and other hazards.
- Continue to listen to a NOAA Weather Radio or local radio or television stations and return home only when authorities indicate it is safe to do so. Flood dangers do not end when the water begins to recede; there may be flood-related hazards within your community, which you could hear about from local broadcasts.
- Stay out of any building if floodwaters remain around the building. Floodwaters often undermine foundations, causing sinking, floors can crack or break and buildings can collapse.
- Avoid entering ANY building (home, business, or other) before local officials have said it is safe to do so. Buildings may have hidden damage that makes them unsafe. Gas leaks or electric or waterline damage can create additional problems.
- Report broken utility lines to the appropriate authorities. Reporting potential hazards will get the utilities turned off as quickly as possible, preventing further hazard and injury. Check with your utility company now about where broken lines should be reported.

- Avoid smoking inside buildings. Smoking in confined areas can cause fires.
- When entering buildings, use extreme caution. Building damage may have occurred where you least expect it. WATCH carefully every step you take.
- Wear sturdy shoes. The most common injury following a disaster is cut feet.
- Use battery-powered lanterns or flashlights when examining buildings. Battery-powered lighting is the safest and easiest, preventing fire hazard for the user, occupants, and building.
- Examine walls, floors, doors, staircases, and windows to make sure that the building is not in danger of collapsing.
- Inspect foundations for cracks or other damage. Cracks and damage to a foundation can render a building uninhabitable.
- Look for fire hazards. There may be broken or leaking gas lines, flooded electrical circuits, or submerged furnaces or electrical appliances. Flammable or explosive materials may travel from upstream. Fire is the most frequent hazard following floods.
- Check for gas leaks. If you smell gas or hear a blowing or hissing noise, open a window and quickly leave the building. Turn off the gas at the outside main valve if you can and call the gas company from a neighbor's home. If you turn off the gas for any reason, a professional must turn it back on.
- Look for electrical system damage. If you see sparks or broken or frayed wires, or if you smell burning insulation, turn off the electricity at the main fuse box or circuit breaker. If you have to step in water to get to the fuse box or circuit breaker, call an electrician first for advice. Electrical equipment should be checked and dried before being returned to service.
- Check for sewage and waterline damage. If you suspect sewage lines are damaged, avoid using the toilets and call a plumber. If water pipes are damaged, contact the water company and avoid using water from the tap. You can obtain safe water

from undamaged water heaters or by melting ice cubes.

- Watch out for animals, especially poisonous snakes that may have come into buildings with the floodwaters. Use a stick to poke through debris. Floodwaters flush snakes and many animals out of their homes.
- Watch for loose plaster, drywall, and ceilings that could fall.
- For insurance claims, take pictures of both of building and content damage.

After Returning Home

- Throw away food that has come in contact with floodwaters. Some canned foods may be salvageable. If the cans are dented or damaged, throw them away. Food contaminated by floodwaters can cause severe infections.
- If water is of questionable purity, boil or add bleach, and distill drinking water before using. (See information on water treatment under the "Disaster Supply Kit" section.) Wells inundated by floodwaters should be pumped out and the water tested for purity before drinking. If in doubt, call your local public health authority. Ill health effects often occur when people drink water contaminated with bacteria and germs.
- Service damaged septic tanks, cesspools, pits, and leaching systems as soon as possible. Damaged sewage systems are health hazards.

HURRICANES

There are no other storms on earth like hurricanes. Views of hurricanes from satellites located thousands of miles above the earth show how these powerful, tightly coiled weather systems are unique. Each year, on average, 10 tropical storms (of which six become hurricanes) develop over the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico. Many of these storms remain over the ocean. However, an average of five hurricanes strike the United States coastline every three years. Of these five, two will be major hurricanes, which are storms of category 3 or higher on the Saffir-Simpson scale, which corresponds to hurricanes with winds at or above 111 miles per hour.

Timely warnings have greatly diminished hurricane fatalities in the United States. In spite of this, property damage continues to mount. There is little we can do about the hurricanes themselves. However, the National Oceanic and Atmospheric Administration's (NOAA's) Tropical Prediction Center and National Weather Service (NWS) field offices team up with other federal, state, and local agencies; rescue and relief organizations; the private sector and the news media in a huge warning and preparedness effort.

An average of five hurricanes strike the United States coastline every three years. Of these five, two will be major hurricanes.

What Are Hurricanes?

Hurricanes and tropical storms are cyclones with tropical origins (tropical cyclones). When the winds of a tropical storm (winds 39 to 73 miles per hour) reach a constant speed of 74 miles per hour or more, it is called a hurricane. Hurricane winds blow in a large spiral around a relatively calm center known as the "eye." The "eye" is generally 20 to 30 miles wide, and the storm may have a diameter of 400 miles across. As a hurricane

approaches, the skies will begin to darken and winds will grow in strength. A hurricane can bring torrential rains, high winds, and storm surge as it nears land. A single hurricane can last more than two weeks over open waters and can run a path across the entire length of the eastern seaboard. More dangerous than the high winds of a hurricane is the storm surge--a dome of ocean water that can be 20 feet high at its peak and 50 to 100 miles wide. The surge can devastate coastal communities as it sweeps ashore. In recent years, the fatalities associated with storm surge have been greatly reduced as a result of better warning and preparedness within coastal communities. Most deaths due to tropical cyclones are flood-related. Inland flooding is a common occurrence with hurricanes and tropical storms. Torrential rains from decaying hurricanes and tropical storms can produce extensive urban and river flooding. Winds from these storms located offshore can drive ocean water up the mouth of rivers, compounding the severity of inland flooding. In addition, hurricanes can spawn tornadoes, which add to the destructiveness of the storm.

Awareness Information

A National Weather Service WATCH is a message indicating that conditions favor the occurrence of a certain type of hazardous weather. For example, a severe thunderstorm WATCH means that a severe thunderstorm is expected in the next six hours or so within an area approximately 120 to 150 miles wide and 300 to 400 miles long (36,000 to 60,000 square miles). The NWS Storm Prediction Center issues such WATCHES. Local NWS forecast offices issue other WATCHES (flash flood, winter weather, etc.) 12 to 36 hours in advance of a possible hazardous-weather or flooding event. Each local forecast office usually covers a state or a portion of a state. An NWS WARNING indicates that a hazardous event is occurring or is imminent in about 30 minutes to an hour. Local NWS forecast offices issue warnings on a county-by-county

basis. A hurricane WATCH is issued when there is a threat of hurricane conditions within 24 to 36 hours. A hurricane WARNING is issued when hurricane conditions are expected in 24 hours or less.

Develop a Family Disaster Plan

If you live in Coastal Georgia, you are at risk from hurricanes. Hurricane-specific planning should include the following:

Learn about your community's risk from hurricanes. Contact the Emergency Management Agency, local National Weather Service office, or the American Red Cross for more information on hurricanes and how to prepare for them.

To determine the elevation of your home, write to the County Engineering Department, 124 Bull Street, Savannah, GA 31401, to find out if you live in an area that could flood during a hurricane or heavy rains. If you live in a risk area, learn what types of supplies should be stored to protect your home from floodwaters. Knowing the elevation of your property in relation to nearby streams and dams will let you know if forecasted flood levels will affect your home. Talk to your insurance agent. Homeowners' policies do not cover flooding from hurricanes. Ask about the National Flood Insurance Program (NFIP).

Ask about the County's hurricane preparedness plan. The EMA office or local chapter of the American Red Cross should be able to provide you with details of this plan, including information on the safest evacuation routes, nearby shelters, advice on when schools would be closed and what conditions are necessary for recommended evacuation of certain areas. Discuss hurricanes with your family. Everyone should know what to do in case all family members are not together. Discussing hurricanes ahead of time will help reduce fear

and anxiety, and lets everyone know how to respond. Review flood safety and preparedness measures with your family and develop an evacuation plan. Everyone in your family should now where to go if they have to leave. Trying to make plans at the last minute can be upsetting and create confusion.

Determine where to move your boat in an emergency. Marinas and other storage facilities may fill up quickly. Some locations may have less risk of damage than others. You may be required to secure your boat well in advance of approaching hurricanes.

Assemble a Disaster Supply Kit

Please see the "Disaster Supply Kit" for general supply information. Hurricane-specific supplies should include the Disaster Supply Kit basics as well as:

- A week's supply of food and water (to be kept at home in addition to the recommended three-day supply for your evacuation kit) Disaster Supply Kit
- Evacuation Supply Kit

How to Protect Your Property

Make a list of items to bring inside in the event of a storm to help you remember anything that can be broken or picked up by strong winds. Hurricane winds, often in excess of 100 miles per hour, can turn unanchored items into deadly missiles.

Keep trees and shrubbery trimmed. Make trees more wind resistant by removing diseased or damaged limbs, then strategically remove branches so that wind can blow through. Hurricane winds frequently break weak limbs and hurl them at great speed, causing great damage when they hit property. Debris collection services may not be operating just before a storm, so it is best to do this well in advance of approaching storms.

Remove any debris or loose items in your yard. Hurricane winds can pick up anything unsecured, creating damage to property when the debris hits.

Clear loose and clogged rain gutters and downspouts. Hurricanes often bring long periods of heavy rain. Providing clear drainage will help prevent misdirected flooding.

Install permanent hurricane shutters. Hurricane shutters provide the best protection for your windows and doors. Taping windows could take critical time from more effective preparedness measures. All tape does is help prevent glass from broken windows from scattering all over inside. Tape does not prevent windows from breaking. Cover the outside of windows with shutters or plywood.

If you do not have permanent hurricane shutters, install anchors for plywood (marine plywood is best) and pre-drill holes in precut half-inch outdoor plywood boards so that you can cover the windows of your home quickly. Mark which board fits which window. Most homes destroyed during recent hurricanes had no window protection. When wind enters a home through broken windows, the pressure builds against the walls and can lift roofs, followed by collapsing walls.

Install protection to the outside areas of sliding glass doors.

Glass doors are as vulnerable as windows to breakage by wind-driven objects.

Well ahead of time, buy any other items needed to board up windows and protect your home. When a hurricane threatens, supplies are quickly sold out at many stores. Stock may not be replenished until after the storm.

Strengthen garage doors. Many houses are destroyed by hurricane winds that enter through damaged garage doors, lifting roofs, and destroying the remainder of the house.

Have an engineer check your home and advise about ways to make it more resistant to hurricane winds. There are a variety of ways to protect your home. Professionals can advise you of engineering requirements, building permits or requirements of local planning and zoning departments to provide the most effective protection.

Elevate coastal homes. Raising houses to a certain height will make them more resistant to hurricane-driven waters. There may be many local codes affecting how and where homes can be elevated.

If you live in a flood plain or are prone to flooding, also follow flood preparedness precautions. Hurricanes can bring great amounts of rain and frequently cause floods. Some hurricanes have dropped more than 10 inches of rain in just a few hours.

What to Do During a Hurricane WATCH

Continue listening regularly to a NOAA Weather Radio or local radio or television stations for updated information. Hurricanes can change direction, intensity, and speed very suddenly. A minor storm several hours ago can quickly escalate to a major threat.

Listen to the advice of local officials, and evacuate if they tell you to do so. Avoid flooded roads and watch for washed-out bridges. Leaving an area that may be affected will help keep your family safe.

Local officials may call for evacuation in specific areas at greatest risk in your community. Following the advice of local authorities is your safest protection. Certain roads near the coast may be closed

Prepare your property for high winds. Hurricane winds can send them crashing into homes. Anything not secured may become a deadly or damaging projectile.

Bring lawn furniture inside, as well as outdoor decorations or ornaments, trashcans, hanging plants, or anything else that can be picked up by the wind.

Make trees more wind resistant by removing diseased and damaged limbs and strategically remove branches so that wind can blow through.

Secure building by closing and boarding up each window of your home. Remove outside antennas.

Moor boat securely or move it to a designated safe place. Use rope or chain to secure boat to trailer. Use tie-downs to anchor trailer to the ground or house.

Fill your car's gas tank. If advised to evacuate, you may have to travel long distances or be caught in traffic, idling for long periods of time. Gas stations along the route may be closed.

Stock up on prescription medications in the event stores and pharmacies are closed after the storm.

Recheck manufactured home tie-downs. Manufactured homes may not be as affected by strong winds if they are tied down according to the manufacturer's instructions. Properly tied down homes are more likely to stay fixed to their foundations.

Check your Disaster Supply Kit. Some supplies may need to be replaced or restocked.

Turn refrigerator and freezer to coldest setting. Open only when absolutely necessary and close quickly. Keeping

the coldest air in will help perishables last much longer in the event of a power failure.

Store valuables and personal papers in a waterproof safety deposit box or in a waterproof container on the highest level of your home. Hurricanes leave much water damage inside homes. Historically, it is shown that protecting valuables in this manner will provide the best security.

Turn off utilities if told to do so by authorities. Authorities may ask you to turn off water or electric utilities to prevent damage to your home or within the community. Most of the time they will tell you to leave the gas on because a professional is required to turn your gas back on, and it may be several weeks before you receive service.

Turn off propane tanks. Propane tanks may be damaged or dislodged by strong winds or water. Turning them off reduces the fire potential if they are damaged by the storm.

Unplug small appliances. Small appliances may be affected by electrical power surges that may occur as the storm approaches. Unplugging them reduces potential damage.

Review evacuation plan. Make sure your planned route is the same as the currently recommended route. Sometimes roads may be closed or blocked, requiring a different route.

Stay away from floodwaters. If you come upon a flooded road, turn around and go another way. When you are caught on a flooded road and waters are rising rapidly around you, if you can do so safely, get out of your vehicle and climb to higher ground. Floods cause most hurricane-related deaths and most flood fatalities are caused by people attempting to drive through water. The depth of water is not always obvious. The roadbed may

be washed out under the water, and you could be stranded or trapped. Rapidly rising water may stall the engine, engulf the vehicle and its occupants, and sweep them away. Two feet of water will carry away most automobiles.

What to Do During a Hurricane WARNING

Listen to a NOAA Weather Radio, or portable, battery-powered radio or television for updated information and official instructions. Hurricanes can change direction, intensity, and speed very suddenly. Continue listening for local information.

If officials announce a hurricane WARNING, they may ask you to leave your home as soon as possible to be safe. Take your Disaster Supply Kit and go to a shelter or your family contact's home.

Call your check-in contact so someone will know where you are going. Local officials advise leaving only if they truly believe your location is in danger. It is important to follow their instructions as soon as possible. Roads may become blocked and the storm can worsen, preventing safe escape. Having your disaster supplies will make you more comfortable while you are away from home.

If you are not advised to evacuate, stay indoors, on the first floor away from windows, skylights and glass doors, even if they are covered. Stay on the floor least likely to be affected by strong winds and floodwaters. A small interior room without windows on the first floor is usually the safest place. Have as many walls between you and the outside winds as possible. Sometimes strong winds and projectiles may tear hurricane shutters off, so stay away from windows even if they are covered. Lie on the floor under a table or other sturdy object. Being under a sturdy object will offer greater protection from falling objects. Close all interior doors. Secure and brace

external doors. Closed doors will help prevent damaging hurricane winds from entering additional rooms.

Have a supply of flashlights and extra batteries handy. Avoid using open flames (candles and kerosene lamps) as a source of light. Flashlights provide the safest emergency lighting source.

Store drinking water in clean bathtubs, sinks, plastic bottles, and cooking utensils. Public water supplies and wells may become contaminated, or electric pumps may be inoperative if power is lost. Survivors of community-wide disasters have said the greatest need following the disaster is water.

If power is lost, turn off major appliances to reduce the power "surge" when electricity is restored. When electricity is restored, the surge from many major appliances starting at the same time may cause damage or destroy the appliances. Turning off or unplugging major appliances will allow you to decide when it is best to turn them back on.

If in a mobile home, check tie-downs and evacuate immediately. Historically, manufactured homes suffer the greatest amount of damage during hurricanes.

Be aware that the calm "eye" is deceptive; the storm is not over. The worst part of the storm will happen once the eye passes over and the winds blow from the opposite direction. Trees, shrubs, buildings, and other objects damaged by the first winds can be broken or destroyed by the second winds. The opposing winds begin suddenly, and have surprised and injured many people who ventured out during the eye.

Watch out for flooding. Hurricanes and tropical storms often drop large amounts of rainfall and cause severe flooding, even when they are weakening or are no longer a named storm. "Weak" tropical storms are just as

capable of producing heavy rainfall and flooding as major hurricanes.

What to Do If Evacuation Is Necessary

Leave as soon as possible (if possible, in daylight). Avoid flooded roads and WATCH for washed-out bridges. Roads and bridges frequently become crowded and traffic moves slowly. Evacuation will probably take longer than expected. Give yourself plenty of time.

Secure your home by unplugging appliances and turning off electricity and the main water valve. This will reduce potential damage to your appliances (from power surges) and to your home.

Tell someone outside of the storm area where you are going. Relatives and friends will be concerned about your safety. Letting someone know your travel plans will help relieve their fear and anxiety.

If time permits, and you live in an identified surge zone or area prone to flooding, move furniture to a higher floor. Moving valuable furnishings helps reduce potential damage.

Bring pre-assembled emergency supplies and warm protective clothing. People frequently arrive at shelters or hotels with nothing. Having these items will make you more comfortable in other locations.

While shelters provide a safe place to stay and food, specialty items for infants and individuals on restricted diets may not be available. It may take several days until permission is given by local authorities to re-enter an evacuated area. Bring your Disaster Supply Kit with you to a shelter:

Lock your property as you normally would when leaving home.

What to Do After a Hurricane

Continue listening to local radio or television stations or a NOAA Weather Radio for information and instructions. Access may be limited to some parts of the community, or roads may be blocked.

If you evacuated, return home when local officials tell you it is safe. Local officials on the scene are your best source of information on accessible areas and passable roads.

Stay alert for extended rainfall and subsequent flooding, even after the hurricane or tropical storm has weakened. Hurricanes may stall or change direction when they make landfall, or they may bring a lot of rain upriver, causing additional flood hazards for hours or days after the storm.

Drive only if absolutely necessary and avoid flooded roads and washed-out bridges. Continue to follow all flood safety messages. Floodwaters may last for days following a hurricane. If you come upon a flooded road, turn around and go another way. When you are caught on a flooded road and waters are rising rapidly around you, if you can safely get out of the car, do so immediately and climb to higher ground. Never try to walk, swim, or drive through such swift water. Most flood fatalities are caused by people attempting to drive through water or people playing in high water. If it is moving swiftly, even water six inches deep can sweep you off your feet, and two feet can carry away most automobiles.

If you come upon a barricade, follow detour signs or turn around and go another way. Barricades are put up to close roads, driving around barricades can be a serious risk.

Stay on firm ground. Moving water only six inches deep can sweep you off your feet. Standing water may be electrically charged from underground or downed power lines.

Help injured or trapped persons. Give first aid where appropriate.

Do not move seriously injured persons unless they are in immediate danger of further injury. Call for help.

Help a neighbor who may require special assistance--infants, elderly people, and people with disabilities. Elderly people and people with disabilities may require additional assistance. People who care for them or who have large families may need additional assistance in emergency situations.

Avoid disaster areas. Your presence might hamper rescue and other emergency operations, and put you at further risk from the residual effects of floods, such as contaminated waters, crumbled roads, landslides, mudflows, and other hazards.

Avoid loose or dangling power lines; immediately report them to the Power Company, police, or fire department. Reporting potential hazards will get the utilities turned off as quickly as possible, preventing further hazard and injury.

Electrical equipment should be checked and dried before being returned to service. Call an electrician for advice before using electricity, which may have received water damage.

Stay out of the building if water remains around the building, it often undermines foundations, causing buildings to sink, floors to crack, or walls to collapse.

When entering buildings, use extreme caution. Hurricane-driven may have damaged buildings where you least expect it. Carefully watch every step you take.

Wear sturdy shoes. The most common injury following a disaster is cut feet.

Use battery-powered lanterns or flashlights when examining buildings. Battery-powered lighting is the safest and easiest, preventing fire hazard for the user, occupants, and building.

Examine walls, floors, doors, staircases, and windows to make sure that the building is not in danger of collapsing. Inspect foundations for cracks or other damage. Cracks and damage to a foundation can render a building uninhabitable.

Look for fire hazards. There may be broken or leaking gas lines, flooded electrical circuits, or submerged furnaces or electrical appliances. Flammable or explosive materials may come from upstream. Fire is the most frequent hazard following floods.

Check for gas leaks. If you smell gas or hear a blowing or hissing noise, open a window and quickly leave the building. Turn off the gas, using the outside main valve if you can, and call the gas company from a neighbor's home. If you turn off the gas for any reason, a professional must turn it back on.

Look for electrical system damage. If you see sparks or broken or frayed wires, or if you smell burning insulation, turn off the electricity at the main fuse box or circuit breaker. If you have to step in water to get to the fuse box or circuit breaker, call an electrician first for advice. Electrical equipment should be checked and dried before being returned to service.

Check for sewage and water line damage. If you suspect sewage lines are damaged, avoid using the toilets and call a plumber. Service damaged septic systems as soon as possible. Damaged sewage systems are health hazards.

If water pipes are damaged, contact the water company, and avoid using water from the tap. You can obtain safe water from undamaged water heaters or by melting ice cubes.

Watch out for animals, especially poisonous snakes that may have come into buildings with the floodwaters that flush many animals and snakes out of their homes. Use a stick to poke through debris.

Watch for loose plaster, drywall, and ceilings that could fall.

Take pictures of the damage, both of the building and its contents, for insurance claims.

Open windows and doors to ventilate and dry your home.

Check refrigerated food for spoilage. If power was lost, some foods may be spoiled.

Avoid drinking or preparing food with tap water until you are certain it is not contaminated. Hurricane-driven may have contaminated public water supplies or wells. Local officials should advise you on the safety of the drinking water. Undamaged water heaters or melted ice cubes can provide good sources of fresh drinking water.

Pump out flooded basements gradually (about one-third of the water per day) to avoid structural damage. If the water is pumped out completely in a short period of time, pressure from water on the outside could cause basement walls to collapse.

TORNADOES

Tornadoes have been reported in every state, and though they generally occur during spring and summer, they can happen any time of the year. While tornadoes can occur at any time of the day or night, they are most likely to occur between 3:00 and 9:00 p.m. There are no areas immune to tornadoes. Regardless of the location or time of year, if conditions are right, a tornado can happen. Over 1,000 tornadoes are reported annually nationwide, and as our tornado detection systems improve, more are being reported each year. However, sometimes tornadoes will develop in areas in which no tornado WATCH or WARNING is in effect, so stay alert for changing weather conditions.

What Are Tornadoes?

A tornado is a violently rotating column of air extending from a thunderstorm to the ground. The most violent tornadoes have rotating winds of 250 miles per hour or more. They are capable of causing extreme destruction, including uprooting trees and well-made structures, and turning normally harmless objects into deadly missiles. Most tornadoes are just a few dozen yards wide and only briefly touch down, but highly destructive violent tornadoes may carve out paths over a mile wide and more than 50 miles long.

Tornadoes develop from severe thunderstorms in warm, moist, unstable air along and ahead of cold fronts. Such thunderstorms also may generate large hail and damaging winds. When intense springtime storm systems produce large, persistent areas that support tornado development, major outbreaks can occur.

Landfalling tropical storms and hurricanes also generate tornadoes. Such tornadoes are most common to the right and ahead of the storm path or the storm center as it comes ashore.

While tornadoes can be highly destructive and are potentially deadly, timely precautions can save lives and reduce property damage. During active weather, stay alert of the forecast by listening to radio or television or by using a NOAA Weather Radio.

Awareness Information

A National Weather Service WATCH is a message indicating that conditions favor the occurrence of a certain type of hazardous weather. For example, a severe thunderstorm WATCH means that a severe thunderstorm is expected in the next six hours or so within an area approximately 120 to 150 miles wide and 300 to 400 miles long (36,000 to 60,000 square miles). The NWS Storm Prediction Center issues such WATCHES. Local NWS forecast offices issue other WATCHES (flash flood, winter weather, etc.) 12 to 36 hours in advance of a possible hazardous-weather or flooding event. Each local forecast office usually covers a state or a portion of a state.

An NWS WARNING indicates that a hazardous event is occurring or is imminent in about 30 minutes to an hour. Local NWS forecast offices issue warnings on a county-by-county basis.

Tornadoes may appear nearly transparent until dust and debris are picked up. Stay alert for high winds even if you do not "see" a tornado.

Tornadoes often occur when it is not raining. Tornadoes are associated with a powerful updraft, so rain does not fall in or next to a tornado. Very large hail, however, does fall in the immediate area of the tornado. In humid environments, rain often tends to wrap around the tornado, being pulled from the main precipitation area around the outside of the rotating updraft. The rain could make it difficult to see the tornado.

Waterspouts are weak tornadoes that form over warm water and are most common along the southeastern

states. Waterspouts, which are tornadoes over a body of water, occasionally move inland becoming tornadoes and causing damage and injuries.

Damage happens when wind gets inside a home through a broken window, door, or damaged roof. Keep windows closed. Houses do not explode due to air pressure differences. Stay away from windows during severe storms. Flying debris could shatter the glass and cause injury.

When selecting a tornado "safe place," look for a place on the lowest level and away from windows, preferably in a small room (closet or bathroom) in the center of the house. Closer walls will help provide more support to the roof, and each wall between you and the outside will provide further protection.

Folklore passed down through the generations used to advise opening windows in case of a tornado because air pressure differences would cause a house to explode. This information is not true. Air pressure differences in a tornado are not strong enough to cause a house to explode; houses are damaged by the violent winds associated with a tornado and from the debris blown at high velocities by tornado winds.

Folklore also used to advise that if you are driving and a tornado is suspected or sighted, you should turn and drive at right angles to the storm. This advice is not recommended because tornadoes do not necessarily travel in straight lines; you cannot always tell the direction the storm is coming from; the road you turn onto may curve and head into the storm, rather than away from it; and there may be more than one tornado associated with a strong storm system, but you may not see it because visibility is diminished by heavy rain and wind-blown debris. The safest thing to do is to go inside a nearby sturdy building to an area on the lowest level, without windows. If a sturdy building is not available, then get out

of the vehicle and lay down in a low spot on the ground not subject to flooding, protecting the head and neck.

Develop a Family Disaster Plan. Please see the "Family Disaster Plan" section for general family planning information. Tornado-specific planning should include the following:

Pick a safe place in your home where family members could gather during a tornado. The safest place to be is underground, or as low to the ground as possible, and away from all windows. Consider designating an interior hallway or room on the lowest floor as your "safe place". Putting as many walls as you can between you and the outside will provide additional protection. Less than two-percent of all tornadoes are powerful enough to completely destroy a sturdy building. Make sure there are no windows or glass doors in your safe place and keep this place uncluttered.

Consider having your tornado safe place reinforced. Additional reinforcement will add more protection from the damaging effects of tornado winds. Get more information from FEMA about building a tornado safe room.

If you are in a high-rise building, pick a place in a hallway in the center of the building. You may not have enough time to go to the lowest floor. Center hallways are often structurally the most reinforced part of a building.

If you live in a mobile home, choose a safe place in a nearby sturdy building. A sturdy building provides greater protection. If your mobile home park has a designated shelter, make it your safe place. Mobile homes are much more vulnerable to strong winds than site-built structures. Prior to 1994, most manufactured homes were not designed to withstand even moderate winds.

Learn about your community's warning system. Use a NOAA Weather Radio with a tone-alert feature to keep

you aware of WATCHES and WARNINGS while you are indoors.

Conduct periodic tornado drills so everyone remembers what to do when a tornado is approaching. Have everyone in the family practice going to your designated area in response to a tornado threat. Practicing your plan makes the appropriate response more of a reaction, requiring less thinking time during an actual emergency situation.

Check with your work and your children's schools and day care centers to learn their tornado emergency plans. Every building has different safe places. It is important to know where they are and how to get there in an emergency.

Discuss tornadoes with your family. Everyone should know what to do in case all family members are not together. Discussing disaster ahead of time helps reduce fear and lets everyone know how to respond during a tornado.

What to Tell Children

Find safe places in your home and classroom. Make sure these places are away from windows and tall furniture that could tip over. In your safe place, get under something sturdy, or use a large, hardcover book to help protect your head and neck from flying or falling objects. Locate safe places outside in case you are not able to go inside. Frequently, children in schools are told to move to the inner hallways away from windows. Children need to know that a tornado safe place is not the same as a fire-meeting place.

Wherever you are, if you hear or see a tornado coming, take cover right away. Tornadoes can move quickly, blowing objects at very high speeds. Protect yourself from flying debris by taking cover immediately.

If you're in a house or apartment building and a tornado threatens, go to the lowest level. Once on the lowest level, go to the middle of the building away from windows, into a bathroom or closet. The safest place to be is under the ground, or as low to the ground as possible, and away from all windows. Putting as many walls as you can between you and the outside will provide additional protection. Make sure there are no windows or glass doors in your safe place and keep this place uncluttered.

Get under something sturdy, such as a heavy table, hold on and stay there until the danger has passed. Being under something heavy will help protect you from falling objects. If tornado wind enters the room and the object moves, holding on with one hand will help you move with it, keeping you protected.

Use your other arm and hand to protect your head and neck from falling or flying objects. Your head and neck are more easily injured than other parts of your body. Protect them as much as you can.

If you're outside in a car or in a mobile home, go immediately to an interior room in a nearby sturdy building. Tornado winds can blow large objects, including cars, hundreds of feet away. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air. Never try to out-drive a tornado. Mobile homes are particularly vulnerable. A mobile home can overturn very easily even if precautions have been taken to tie down the unit.

If there is no building nearby, lie flat in a low spot. Use your arms and hands to protect your head. Tornadoes cause a lot of debris to be blown at very high speeds. Dangerous flying debris can be blown under highway overpasses and bridges, or weaker overpasses and bridges could be destroyed. You will be safer lying flat in a low-lying area where wind and debris will blow above you. Tornadoes come from severe thunder- storms, which can produce a lot of rain. If you see quickly rising

water or floodwater coming towards you, move to another spot.

How to Protect Your Property

Make a list of items to bring inside in the event of a storm. Having a list will help you remember things that may be broken or blown away in strong winds.

Keep trees and shrubbery trimmed. Make trees more wind resistant by removing diseased or damaged limbs and strategically remove branches so that wind can blow through. Strong winds frequently break weak limbs and hurl them at great speed, causing damage or injury when they hit. Debris collection services may not be operating just before a storm, so it is best to do this well in advance of approaching storms.

Remove any debris or loose items in your yard. Branches and firewood may become missiles in strong winds.

Consider installing permanent shutters to cover windows. Shutters can be closed quickly and provide the safest protection for windows.

Strengthen garage doors. Garage doors are often damaged or destroyed by flying debris, allowing strong winds to enter. As winds apply pressure to the walls, the roof can be lifted off, and the rest of the house can easily follow.

Assemble a Disaster Supply Kit

Please see the section "Disaster Supply Kit" for general supplies kit information. Tornado-specific supplies should include the Disaster Supply Kit basics as well as a highway map to follow storm movement from weather bulletins.

What to Do Before a Tornado

Use a NOAA Weather Radio with a tone-alert feature to keep you informed of WATCHES and WARNINGS issued

in your area. The tone-alert feature will automatically alert you when a WATCH or WARNING is issued.

If planning a trip or extended period of time outdoors, listen to the latest forecasts and take necessary action if threatening weather is possible. Knowing what weather could happen helps you be prepared to respond if necessary. Having a raincoat, umbrella, and Disaster Supply Kit available will make it easier to deal with severe weather if it occurs.

WATCH for tornado danger signs. Tornadoes may happen so quickly WARNINGS can't be issued long in advance. Pay attention to weather clues that may warn of imminent danger.

- Dark, often greenish sky. Sometimes one or more of the clouds turns greenish (a phenomenon caused by hail) indicating a tornado may develop.
- Wall cloud, an isolated lowering of the base of a thunderstorm; this cloud is particularly suspect if it is rotating.
- Large hail. Tornadoes are spawned from powerful thunderstorms and the most powerful thunderstorms produce large hail. Tornadoes frequently emerge from near the hail-producing portion of the storm.
- Cloud of debris. An approaching cloud of debris can mark the location of a tornado even if a funnel is not visible.
- Funnel cloud. A visible rotating extension of the cloud base is a sign that a tornado may develop.
- Roaring noise. The high winds of a tornado can cause a roar that is often compared with the sound of a freight train.

Tornadoes may occur near the trailing edge of a thunderstorm and be quite visible. It is not uncommon to see clear, sunlit skies behind a tornado. They may also be embedded in rain and not visible at all.

If you live in a single-family home in a tornado-prone area, find out how to reinforce an interior room on the lowest level of your home (such as a closet) to use as a shelter. Plans for reinforcing an interior room to provide better tornado protection in your home are available from your local emergency management office or from FEMA's website at www.fema.gov.

What to Do During a Tornado WATCH

- Listen to a NOAA Weather Radio or local radio or television stations for updated information. Tornadoes can change direction, intensity, and speed very quickly.
- Be alert to changing weather conditions. Tornadoes accompany severe thunderstorms, and weather conditions can change rapidly. Large hail, blowing debris, or the sound of an approaching tornado may alert you. Many people say approaching tornadoes sound like a freight train.

What to Do During a Tornado WARNING

- **What to Do If Indoors**
 - Listen to a battery-powered NOAA Weather Radio, regular radio, or television for updated information. If the electricity should go out, you will still be able to receive emergency information.
 - Go to your safe place to protect yourself from glass and other flying objects. Tornadoes can change direction, intensity, and speed very quickly. The tornado may be approaching your area.
 - Get under a piece of sturdy furniture, such as a workbench or heavy table, and hold on to it. Sturdy furniture will help protect you from falling debris. If tornado wind enters the room and the

object moves, holding on with one hand will help you move with it, keeping you protected.

- Use your other arm and hand to protect your head and neck from falling or flying objects. Your head and neck are more easily injured than other parts of your body. Protect them as much as you can.
 - Stay away from windows. Opening windows allows damaging winds to enter the structure. Leave the windows alone; instead, immediately go to a safe place. It is a myth that tornadoes cause houses to explode due to changes in air pressure. Flying debris can shatter glass. Violent winds and debris slamming into buildings cause most structural damage.
- **What to Do If Outdoors**
 - If possible, get inside a building.
 - If shelter is not available, lie in a ditch or crouch near a strong building.
 - Be aware of the potential for flooding.
 - Use arms to protect head and neck.
 - If you're outside in a car or in a mobile home, go immediately to a nearby sturdy building, they are the safest place to be. Tornado winds can blow large objects, including cars and mobile homes, hundreds of feet away. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air; never try to out-drive a tornado. Mobile homes are particularly vulnerable. A mobile home can overturn very easily even if precautions have been taken to tie down the unit.
 - Avoid places with wide-span roofs, such as auditoriums, cafeterias, large hallways, or shopping malls. Wide-span roofs are frequently damaged or destroyed in tornado winds, providing less protection and more risk of injury, than roofs over smaller rooms.

- **What to Do If In a Car**

- Never try to out drive a tornado. Get out of the car and take shelter in a nearby building.
- If shelter is not available, lie in a ditch or crouch near a strong building.
- Be aware of the potential for flooding.
- Use arms to protect head and neck.

What to Do After a Tornado

- Continue listening to local radio or television stations or a NOAA Weather Radio for updated information and instructions. Access may be limited to some parts of the community, or roads may be blocked.
- Help a neighbor who may require special assistance - infants, elderly and people with disabilities. Elderly and people with disabilities may require additional assistance. People who care for them or who have large families may need additional assistance in emergency situations.
- Help injured or trapped persons. Give first aid where appropriate. Do not move seriously injured persons unless they are in immediate danger of further injury. Call for help.
- Watch out for fallen power lines or broken gas lines and report them to the utility company immediately. Reporting potential hazards will get the utilities turned off as quickly as possible, preventing further hazard and injury.
- Avoid disaster areas. Your presence might hamper rescue and other emergency operations, and put you at further risk from the residual effects of tornadoes.
- Stay out of damaged buildings. Tornadoes can cause great damage, creating further hazards. If you are

away from home, return only when authorities say it is safe.

- When entering damaged buildings, use extreme caution. Moving through debris presents further hazards. Carefully watch every step you take.
 - Wear sturdy shoes. The most common injury following a disaster is cut feet.
 - Use battery-powered lanterns or flashlights when examining buildings. Battery-powered lighting is the safest and easiest, preventing fire hazard for the user, occupants, and building.
 - Examine walls, floors, doors, staircases, and windows to make sure that the building is not in danger of collapsing.
 - Look for fire hazards. There may be broken or leaking gas lines, or damage to electrical systems. Clean up spilled medicines, bleaches, gasoline, or other flammable liquids immediately. Fire is the most frequent hazard following other disasters.
 - Check for gas leaks. If you smell gas or hear a blowing or hissing noise, open a window and quickly leave the building. Turn off the gas using the outside main valve if you can, and call the gas company from a neighbor's home. If you turn off the gas for any reason, a professional must turn it back on.
 - Look for electrical system damage. If you see sparks or broken or frayed wires, or if you smell burning insulation, turn off the electricity at the main fuse box or circuit breaker. If you have to step in water to get to the fuse box or circuit breaker, call an electrician first for advice. Electrical equipment should be checked and dried before being returned to service.

- Check for sewage and water lines damage--If you suspect sewage lines are damaged, avoid using toilets and call a plumber. If water pipes are damaged, contact the water company and avoid using water from the tap. You can obtain safe water by melting ice cubes.
- Watch for loose plaster, drywall and ceilings that could fall.
- Take pictures of the damage, both of the building and its contents, for insurance claims.
- Use the telephone only for emergency calls. Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.

THUNDERSTORMS

Despite their small size, all thunderstorms are dangerous. Every thunderstorm produces lightning, which kills more people each year than tornadoes. Heavy rain from thunderstorms can lead to flash flooding. Strong winds, hail, and tornadoes are also dangers associated with some thunderstorms.

Thunderstorms affect relatively small areas when compared with hurricanes. The typical thunderstorm is 15 miles in diameter and lasts an average of 20 to 30 minutes. Of the estimated 100,000 thunderstorms that occur each year in the United States, only about 10 percent are classified as severe.

What Are Thunderstorms?

The National Weather Service (NWS) considers a thunderstorm severe if it produces hail at least three-quarters of an inch in diameter, has winds of 58 miles per hour or higher, or produces a tornado. When a severe thunderstorm WARNING is issued, review what actions to take under a tornado WARNING or a flash flood WARNING.

Thunderstorms may occur singly, in clusters, or in lines. Some of the most severe weather occurs when a single thunderstorm affects one location for an extended time. Lightning is a major threat during a thunderstorm. It is the lightning that produces thunder in a thunderstorm. Lightning is very unpredictable, which increases the risk to individuals and property. In the United States, 75 to 100 people are killed each year by lightning, although most lightning victims do survive. Persons struck by lightning often report a variety of long-term, debilitating symptoms, including memory loss, attention deficits, sleep disorders, numbness, dizziness, stiffness in joints, irritability, fatigue, weakness, muscle spasms, depression, and an inability to sit for long. It is a myth that

lightning never strikes the same place twice. In fact, lightning will strike several times in the same place in the course of one discharge.

Awareness Information

A National Weather Service WATCH is a message indicating that conditions favor the occurrence of a certain type of hazardous weather. For example, a severe thunderstorm WATCH means that a severe thunderstorm is expected in the next six hours or so within an area approximately 120 to 150 miles wide and 300 to 400 miles long (36,000 to 60,000 square miles). The NWS Storm Prediction Center issues such WATCHES. Local NWS forecast offices issue other WATCHES (flash flood, winter weather, etc.) 12 to 36 hours in advance of a possible hazardous-weather or flooding event. Each local forecast office usually covers a state or a portion of a state.

An NWS WARNING indicates that a hazardous event is occurring or is imminent in about 30 minutes to an hour. Local NWS forecast offices issue warnings on a county-by-county basis.

Lightning often strikes outside of heavy rain and may occur as far as 10 miles away from any rainfall. "Heat lightning" is actually lightning from a thunderstorm too far away for thunder to be heard. However, the storm may be moving in your direction.

You are in danger from lightning if you can hear thunder. Because light travels so much faster than sound, lightning flashes can sometimes be seen long before the resulting thunder is heard. When the lightning and thunder occur very close to one another, the lightning is striking nearby. To estimate the number of miles you are from a thunderstorm, count the number of seconds between a flash of lightning and the next clap of thunder. Divide this number by five.

Many strong thunderstorms produce hail. Large hail, or flying glass it may have broken, can injure people and animals. Hail can be smaller than a pea, or as large as a softball, and can be very destructive to automobiles, glass surfaces (skylights and windows), roofs, plants, and crops. In a hailstorm, take cover immediately. Pets and livestock are particularly vulnerable to hail, so bring animals into shelter before storms begin.

Downbursts and straight-line winds associated with thunderstorms can produce winds 100 to 150 miles per hour, enough to flip cars, vans, and semi-trucks. The resulting damage can equal the damage of most tornadoes. If a severe thunderstorm WARNING is issued, take shelter the same way you would if a tornado were approaching your area. Leave structures that are susceptible to being blown over in high winds, such as a mobile home.

Develop a Family Disaster Plan.

Please see the "Family Disaster Plan" section for general family planning information. Severe thunderstorm specific planning should include the following:

Our County is susceptible to severe thunderstorms. They can occur year-round and at any hour but are especially prevalent during the spring and summer.

Pick a "safe place" in your home where family members can gather during a thunderstorm. This should be a place where there are no windows, skylights, or glass doors, which could be broken by strong winds or hail, causing damage or injury. Severe thunderstorms do, at times, produce tornadoes.

In preparation for possible tornados, consider making your severe thunderstorm "safe place" on the lowest floor of the building, near your tornado safe space.

Learn how to squat low to the ground. Make yourself the smallest target possible for lightning and minimize contact with the ground. Lightning current often enters a victim through the ground rather than by a direct overhead strike. Assume a crouched position on the ground with only the balls of the feet touching the ground, place your hands on your knees, and lower your head. Minimize your body's surface area, and minimize contact with the ground.

Discuss how you would be warned of an approaching thunderstorm. Different communities have different ways of providing warnings. Many communities have sirens intended for outdoor warning purposes. Use a NOAA Weather Radio with a tone-alert feature to keep you aware of WATCHES and WARNINGS while you are indoors.

Get training. Take an American Red Cross first aid and CPR course to learn how to treat burns and how to give rescue breathing and administer CPR. Everyone should know how to respond, because severe thunderstorms can strike almost anywhere at anytime.

Discuss severe thunderstorms with your family. Everyone should know what to do in case all family members are not together. Discussing disaster ahead of time helps reduce fear and lets everyone know how to respond during a severe thunderstorm.

What to Tell Children

The sound of thunder can be especially frightening for young children. Take the "scariness" away by teaching them what to expect during a thunderstorm and how to be safe.

Postpone outdoor activities if thunderstorms are likely. Many people take shelter from the rain, but most people

struck by lightning are not in the rain! Postponing activities is your best way to avoid being caught in a dangerous situation.

If you see or hear a thunderstorm coming, go inside a sturdy building or car. Sturdy buildings are the safest place to be. If no building is nearby, a hardtop vehicle will offer some protection. Keep car windows closed and avoid convertibles. Rubber-soled shoes and rubber tires provide no protection from lightning. However, the steel frame of a hard-topped vehicle provides increased protection if you are not touching metal. Although you may be injured if lightning strikes your car, you are much safer inside a vehicle than outside.

If you can't get inside, or if you feel your hair stand on end, which means lightning is about to strike, hurry to a low, open space immediately. Crouch down on the balls of your feet, place your hands on your knees, and lower your head. Make yourself the smallest target possible and minimize contact with the ground.

Practice the "crouch down" position. Show children how to practice squatting low to the ground to be the smallest target possible for lightning in case they get caught outside in a thunderstorm. Show them how to place their hands on their knees and lower their head, crouching on the balls of their feet.

Stay away from tall things like trees, towers, fences, telephone lines, or power lines. They attract lightning. Never stand underneath a single large tree out in the open, because lightning usually strikes the highest point in an area.

Stay away from metal things that lightning may strike, such as umbrellas, baseball bats, fishing rods, camping equipment, and bicycles. Lightning is attracted to metal and poles or rods.

If you are boating or swimming, get to land immediately. Stay away from rivers, lakes, and other bodies of water and get off the beach. The saturated sand conducts electricity very well. Water is an excellent conductor of electricity. When lightning strikes nearby, the electrical charge can travel through the water. Each year people are killed by nearby lightning strikes while in or on the water or on the beach.

Turn off the air conditioner and television, and stay off the phone until the storm is over. Lightning can cause electric appliances, including televisions and telephones, to become dangerous during a thunderstorm.

Stay away from running water inside the house; avoid washing your hands or taking a bath or shower. Electricity from lightning has been known to come inside through plumbing.

Assemble a Disaster Supply Kit

Please see the section "Disaster Supply Kit" for general supplies kit information. Severe Thunderstorm--specific supplies should include the Disaster Supply Kit basics.

How to Protect Your Property

Make a list of items to bring inside in the event of a storm. Having a list will help you remember things that may be broken or blown away in strong winds.

Keep trees and shrubbery trimmed. Make trees more wind resistant by removing diseased or damaged limbs, then strategically remove branches so that wind can blow through. Strong winds frequently break weak limbs and hurl them at great speed, causing damage or injury when they hit.

Remove any debris or loose items in your yard. Branches and firewood may become missiles in strong winds.

Consider installing permanent shutters to cover windows. Shutters can be closed quickly and provide the safest protection for windows.

Install lightning rods. Lightning rods will carry the electrical charge of lightning bolts safely to the ground, greatly reducing the chance of a lightning-induced fire.

Insure crops against financial loss from storm damage through the Federal Crop Insurance Corporation of the U.S. Department of Agriculture. If applicable, it is recommended you obtain separate specific insurance to cover your crops. Losses are not covered through usual insurance policies. Each year severe storms cause millions of dollars in crop damage. Hail, in particular, has been known to wipe out entire fields.

What to Do Before a Thunderstorm

Use a NOAA Weather Radio with a tone-alert feature to keep you informed of WATCHES and WARNINGS issued in your area. The tone-alert feature will automatically alert you when a WATCH or WARNING is issued.

If planning a trip or extended period of time outdoors, listen to the latest forecasts and take necessary action if threatening weather is possible. Knowing what weather could happen helps you be prepared to respond if necessary. Having a raincoat, umbrella, and Disaster Supply Kit available will make it easier to deal with severe weather if it occurs.

Postpone outdoor activities if thunderstorms are imminent. Coaches of outdoor sports teams should have a NOAA Weather Radio with a tone-alert feature during practice sessions and games. Threatening weather can endanger athletes, staff, and spectators. Many people take shelter from the rain, but most people struck by

lightning are not in the rain! Postponing activities is your best way to avoid being caught in a dangerous situation.

Keep an eye on the sky. Pay attention to weather clues around you that may warn of imminent danger. Look for darkening skies, flashes of lightning, or increasing wind, which may be signs of an approaching thunderstorm.

Stay aware of your surroundings. Look for places you might go if severe weather threatens. Listen for the sound of thunder. If you can hear thunder, you are close enough to the storm to be struck by lightning. Go to safe shelter immediately.

What to Do During a Severe Thunderstorm WATCH

Listen to a NOAA Weather Radio, or local radio or television stations for updated information. Local authorities will provide you with the best information for your particular situation.

Avoid natural lightning rods such as golf clubs, fishing poles, tractors, bicycles, and camping equipment. Lightning is attracted to metal and poles or rods.

Be prepared to seek shelter if a severe thunderstorm approaches. A sturdy building is the safest place to be during a severe thunderstorm. Avoid unprotected gazebos, rain or picnic shelters, golf carts, baseball dugouts and bleachers. While many people take shelter from rain in these locations, they are often isolated structures in otherwise open areas, and, therefore, a target for lightning. In addition, gazebos and picnic shelters are often poorly anchored and subject to being uprooted and blown around in strong thunderstorm winds. They also offer little protection from large hail.

What to Do If a Severe Thunderstorm Is Approaching

Secure outdoor objects such as lawn furniture that could blow away or cause damage or injury. Take light objects inside.

Shutter windows securely and brace outside doors. This will help protect your house from damaging winds or flying debris.

Avoid electrical equipment and telephones. Lightning could follow the wire. Television sets are particularly dangerous at this time.

Avoid bathtubs, water faucets, and sinks because metal pipes can transmit electricity.

What to Do During a Severe Thunderstorm WARNING

Listen to a NOAA Weather Radio or a battery-powered radio or television for updated emergency information. If the power goes out, you still will have access to important information.

What to Do At Home during a Thunderstorm WARNING

Draw blinds and shades over windows. If windows break due to objects blown by the wind or large hail, the shades will help prevent glass from shattering into your home.

Unplug appliances. Avoid using the telephone or any electrical appliances. If lightning strikes, telephone lines and metal pipes can conduct electricity. Leaving electric lights on, however, does not increase the chances of your home being struck by lightning.

Avoid taking a bath or shower, or running water for any other purpose. Metal pipes and plumbing can conduct electricity if struck by lightning.

Turn off the air conditioner. Power surges from lightning can overload the compressor, resulting in a costly repair job.

What to Do If You Are Outside and a Severe Thunderstorm Is Approaching

If you are boating or swimming, get to land, get off the beach, and find shelter immediately. Stay away from rivers, lakes, and other bodies of water. Water is an excellent conductor of electricity. When lightning strikes nearby, the electrical charge can travel through the water. Each year, numbers of people are killed by nearby lightning strikes while in or on the water.

Take shelter in substantial, permanent, enclosed structures, such as reinforced buildings. Sturdy buildings are the safest place to be. Avoid unprotected gazebos, rain or picnic shelters, golf carts, baseball dugouts and bleachers. While many people take shelter from rain in these locations, they are often isolated structures in otherwise open areas, and, therefore, a target for lightning. In addition, gazebos and picnic shelters are often poorly anchored and subject to being uprooted and blown around in strong thunderstorm winds. They also offer little protection from large hail.

If there are no reinforced buildings in sight, take shelter in a car. Keep car windows closed and avoid convertibles. Rubber-soled shoes and rubber tires provide no protection from lightning. However, the steel frame of a hard-topped vehicle provides increased protection if you are not touching metal. Although you may be injured if lightning strikes your car, you are much safer inside a vehicle than outside.

If you are in the woods, find an area protected by a low clump of trees. Never stand underneath a single large

tree in the open. Be aware of the potential for flooding in low-lying areas.

As a last resort and if no structure is available, go to a low-lying, open place away from trees, poles, or metal objects. Make sure the place you pick is not subject to flooding. Have as little contact with the ground as possible. Squat low to the ground. Place your hands on your knees with your head between them. Make yourself the smallest target possible. Do not lie flat on the ground—this will make you a larger target.

Avoid tall structures such as towers, tall trees, fences, telephone lines, and power lines; lightning strikes the tallest objects in an area.

Stay away from natural lightning rods, such as golf clubs, tractors, fishing rods, bicycles, and camping equipment. Lightning is attracted to metal and poles or rods. If you are isolated in a level field or prairie and you feel your hair stand on end (which indicates that lightning is about to strike), drop to your knees and bend forward, putting your hands on your knees. Crouch on the balls of your feet. Do not lie flat on the ground. The electrical build-up just before lightning strikes will cause your hair to stand on end. Make yourself the smallest target possible and minimize contact with the ground.

What to Do While Driving During a Thunderstorm

Pull safely onto the shoulder of the road and stop, making sure you are away from any trees or other tall objects that could fall on the vehicle. Stay in the car and turn on the emergency flashers until the heavy rains subside. Heavy rains produced by thunderstorms can greatly reduce visibility. Vehicles will provide better protection from lightning than being out in the open. Emergency flashers will alert other drivers with limited visibility that you have stopped. Keep car windows closed.

Avoid contact with metal or conducting surfaces outside or inside the vehicle. Lightning that strikes nearby can travel through wet ground to your car. The steel frame of a hard-topped vehicle provides increased protection if you are not touching metal. Rubber tires provide no protection from lightning. Avoid contact with potential conductors to reduce your chance of being shocked. Although you may be injured if lightning strikes your car, you are much safer inside a vehicle than outside.

Avoid flooded roadways. Most flood fatalities are caused by people attempting to drive through water, or people playing in high water. The depth of water is not always obvious. The roadbed may be washed out under the water, and you could be stranded or trapped. Rapidly rising water may stall the engine, engulf the vehicle and its occupants, and sweep them away. Look out for flooding at highway dips, bridges, and low areas. Two feet of water will carry away most automobiles.

What to Do If You Are Boating and Cannot Reach Shore

Stay in the center of the cabin if the boat is so designed. If no enclosure (cabin) is available, stay low in the boat. Don't be a "stand-up human" lightning mast!

Keep arms and legs in the boat. Do not dangle them in the water.

Discontinue fishing, water skiing, scuba diving, swimming or other water activities when there is lightning or even when weather conditions look threatening. The first lightning strike can be a mile or more in front of an approaching thunderstorm cloud.

Disconnect and do not use or touch the major electronic equipment, including the radio, throughout the duration of the storm.

Lower, remove or tie down the radio antenna and other protruding devices if they are not part of the lightning protection system.

To the degree possible, avoid making contact with any portion of the boat connected to the lightning protection system. Never be in contact with two components connected to the system at the same time. Example: The gear levers and spotlight handle are both connected to the system. Should you have a hand on both when lightning strikes, the possibility of electrical current passing through your body from hand to hand is great. The path of the electrical current would be directly through your heart--a very deadly path!

What to Do if Someone Is Struck by Lightning

Call for help. Get someone to dial 9-1-1. Medical attention is needed as quickly as possible.

Give first aid. If breathing has stopped, begin rescue breathing. If the heart has stopped beating, a trained person should give CPR. If the person has a pulse and is breathing, look and care for other possible injuries.

Check for burns in two places. The injured person has received an electrical shock and may be burned, both where they were struck and where the electricity left their body. Being struck by lightning can also cause nervous system damage, broken bones, and loss of hearing or eyesight. People struck by lightning carry no electrical charge that can shock other people, and they can be handled safely.

What to Do After a Thunderstorm

Continue listening to local radio or television stations or a NOAA Weather Radio for updated information and instructions. Access may be limited to some parts of the community, or roads may be blocked.

Help a neighbor who may require special assistance-- infants, elderly people, and people with disabilities. Elderly people and people with disabilities may require additional assistance. People who care for them or who have large families may need additional assistance caring for several people in emergency situations.

Stay away from storm-damaged areas. You may be putting yourself at further risk from the residual effects of severe thunderstorms.

Watch out for fallen power lines and report them immediately. Reporting potential hazards will get the utilities turned off as quickly as possible, preventing further hazard and injury.

MAN-MADE THREATS

RESIDENTIAL HAZARDOUS MATERIALS

Chemicals are a natural and important part of our environment. Even though we often don't think about it, we use chemicals every day. Chemicals help keep our food fresh and our bodies clean. They help our plants grow and fuel our cars, and chemicals make it possible for us to live longer healthier lives.

Under certain conditions, chemicals can be poisonous or have a harmful effect on your health. Some chemicals that are safe, and even helpful in small amounts, can be harmful in larger quantities or under certain conditions.

What Are Residential Hazardous Materials?

A home chemical emergency arises when chemicals are used improperly. Some chemicals that are safe, and even helpful in small amounts, can be harmful in larger quantities or under certain conditions. In fact, most chemical accidents occur in our own homes, and they can be prevented.

Awareness Information

Chemicals are everywhere. You may be exposed to a chemical even though you may not be able to see or smell anything unusual. You may be exposed in three ways:

- Breathing the chemical.
- Swallowing contaminated food, water, or medication.
- Touching the chemical, or coming into contact with clothing or things that have touched the chemical.

The best way to avoid chemical accidents is to read and follow the directions for use, storage, and disposal of the product. Mixing products can be hazardous. If you find someone who appears to have been injured from

chemical exposure, make sure you are not in danger before administering first aid. If you think there might be potential danger, call 9-1-1. If there is no danger, give first aid as needed.

The best way to protect yourself and your family is to be prepared. Knowing what to watch for and how to respond will keep you alert to potential chemical hazards.

Children and Poisoning

The most common home chemical emergencies involve small children eating medicines. Experts in the field of chemical manufacturing suggest taking hazardous materials out of sight could eliminate up to 75 percent of all poisoning of small children.

Keep all medicines, cosmetics, cleaning products, and other household chemicals out of sight and out of reach of children. If your child should eat or drink a non-food substance, find any containers immediately and take them to the phone. Call 9-1-1 and follow their instructions carefully. Often the first aid advice found on containers may not be appropriate. So, do not give anything by mouth until you have been advised by medical professionals.

First Aid for a Home Chemical Emergency

There are several symptoms of chemical poisoning whether by swallowing, touching, or breathing:

- Difficulty breathing
- Changes in skin color
- Headache or blurred vision
- Dizziness
- Irritated eyes, skin, throat
- Unusual behavior
- Clumsiness or lack of coordination
- Stomach cramps or diarrhea

Call 9-1-1. They will give you emergency advice while you wait for professional help. Follow the emergency dispatcher's instructions carefully. Often the first aid advice found on containers may not be appropriate. Do not give anything by mouth until you have been advised by medical professionals. If your child should eat or drink a non-food substance, find any containers immediately and take them to the phone.

- If a hazardous substance comes into contact with an eye, it is important to take immediate action. Delaying first aid can greatly increase the likelihood of injury. Flush the eye with clear, lukewarm water for a minimum of 15 minutes, unless authorities instruct you not to use water on the particular chemical involved. Continue the cleansing process even if the victim indicates he or she is no longer feeling any pain, then seek medical attention.
- If there is danger of a fire or explosion, get out of the house immediately. Do not waste time collecting items or calling the fire department when you are in danger.
- If there is a fire or explosion, call the fire department (9-1-1) from outside using a cellular phone or a neighbor's phone. Once you are safely away from danger, call for professional help.
- Stay away from the house to avoid the possibility of breathing toxic fumes.
- Wash hands, arms, or other parts of the body that may have been exposed to the chemical. Chemicals may continue to irritate the skin until they are washed off.
- Discard any clothing that may have been contaminated. Some chemicals may not wash out completely. Discarding clothes will prevent potential future exposure.
- Administer first aid treatment to victims of chemical burns.
- Call 9-1-1 for emergency help.
- Remove clothing and jewelry from around the injury.

- Pour clean, cool water over the burn for 15 to 30 minutes.
- Loosely cover the burn with a sterile or clean dressing. Be sure that the dressing will not stick to the burn.
- Refer victim to a medical professional for further treatment.

First Aid for Exposure to a Chemical Vapor

If you think you have been exposed to toxic chemicals call 9-1-1.

If you see or smell something that you think may be dangerous, or find someone who has been overcome with toxic vapors, your first job is to make sure that you don't become a victim. If you remain in a dangerous area and become injured or unconscious, you cannot help yourself or any victims.

Because chemical poisoning can be a life-threatening:

- Send someone to call 9-1-1, immediately.
- Tell the operator the location of the emergency and the phone number from where you are calling.
- Describe what has happened, how many people are involved and what is being done to help.
- Stay on the phone until the operator tells you to hang up.
- If you are trained in CPR or first aid, and feel confident that you are not in danger, check the person for life-threatening injuries. Administer appropriate treatment, and then deal with the chemical injuries.

First Aid for Chemical Burns

A chemical burn can be minor or life threatening, but proper treatment can reduce the chance of infection and the damage caused by contact with the chemical.

- Remove any affected clothing or jewelry from the injury. Use lots of cool running water to flush the chemical from the skin until emergency help arrives. The running water will dilute the chemical fast enough to prevent the injury from getting worse.
- Remove any contact lenses and use the same treatment for eye burns. Flush the eye from the nose outward.
- If no large amount of clean water is available, gently brush the chemical off the skin and away from the victim and you.
- If the chemical is on the face, neck, or shoulders, ask the victim to close his or her eyes before brushing off the chemical.
- Cover the wound loosely with a dry, sterile or clean cloth so it will not stick to the wound. Do not put medication on the wound. Seek medical attention immediately.
- If you believe you have been contaminated with a chemical, call 9-1-1. If medical help is not immediately available, remove your clothing starting from the top working your way down to your socks. Take care not to touch your contaminated clothing to your bare skin. Place your clothing in a plastic bag so it cannot contaminate other people or things. Take a thorough shower to wash any chemical away. Re-dress in clean clothing and go for medical help at your first opportunity.

Preventing Chemical Emergencies in the Home

Learn about household chemical risk. Contact authorities on hazardous household materials, such as the Environmental Protection Agency, for information about potentially dangerous household products and their antidotes. Ask about the advisability of maintaining antidotes in your home for cleaners and germicides, deodorizers, detergents, drain and bowl cleaners, gases, home medications, laundry bleaches, liquid fuels, and paint removers and thinners.

Keep all medicines, cosmetics, cleaning products, and other household chemicals out of sight and out of reach of children. The most common home chemical emergencies involve small children eating medicines. Experts in the field of chemical manufacturing suggest that moving hazardous materials out of sight could eliminate up to 75 percent of all poisonings of small children.

Flush medicines that are no longer being used or that are outdated down the toilet, and place the empty container in the trash. Outdated medicines can sometimes cause ill effects. Flushing them will eliminate the risk of people or animals picking them out of garbage.

Store household chemicals according to the instructions on the label. Non-food products should be stored tightly closed in their original container so you can always identify the contents of each container and how to properly use the product.

Avoid mixing common household chemical products. Some combinations of these products, such as ammonia and chlorine bleach, can create toxic gases.

Always read the directions before using a new product. To avoid inhaling dangerous vapors, do not use some products in a small, confined space. Other products should not be used without gloves and eye protection to help prevent the chemical from touching your body.

Read instructions on how to dispose of chemicals properly. Improper disposal can result in harm to yourself or members of your family, accidental contamination of the local water supply, or harm to other people. It is also important to dispose of products properly to preserve the environment and protect wildlife. Plus, some products can be recycled, which helps protect the environment. If you have questions about how to properly dispose of a

chemical, call the facility or the environmental or recycling agency.

Small amounts of the following products can be safely poured down the drain with plenty of water: antifreeze, bathroom and glass cleaner, bleach, drain cleaner, fertilizer, household disinfectant, laundry and dishwashing detergent, rubbing alcohol, rug and upholstery cleaner, and toilet bowl cleaner.

Small amounts of the following products should be disposed of by wrapping the container in newspaper and plastic and placing it in the trash: brake fluid, car wax or polish, dish and laundry soap, drain cleaner, fertilizer, furniture and floor polish, insect repellent, nail polish, oven cleaner, paint thinners and strippers, pesticides, power cleaners, toilet bowl cleaner, water-based paint, and wood preservatives.

Dispose of the following products at a recycling center or a collection site: kerosene, motor or fuel oil, car battery or battery acid, diesel fuel, transmission fluid, large amounts of paint, paint thinner or stripper, power steering fluid, turpentine, gun cleaning solvents, and tires.

Empty spray cans by pressing the button until nothing comes out, then place the can in the trash. Do not place spray cans into a burning barrel, incinerator, or trash compactor because they may explode.

Keep an A-B-C-rated fire extinguisher in the home and car, and get training from your local fire department on how to use them. Should chemicals ignite, you will have an opportunity to extinguish the fire before it spreads, avoiding greater damage.

Learn to detect the presence of a hazardous material. Many hazardous materials do not have a taste or an odor. Some materials can be detected because they cause physical reactions such as watering eyes or

nausea. Some hazardous materials exist beneath the surface of the ground and can be recognized by an oil or foam-like appearance. Recognizing them immediately will allow you to take steps to avoid direct contact and limit your exposure to potentially hazardous chemicals.

Learn to recognize the symptoms of toxic poisoning:

- Difficulty in breathing.
- Irritation of the eyes, skin, throat, or respiratory tract.
- Changes in skin color.
- Headache or blurred vision.
- Dizziness.
- Clumsiness or lack of coordination.
- Cramps or diarrhea.

Precautions

The first precaution you can take is to avoid mixing common household chemical products. Some combinations of these products, such as ammonia and bleach, can create toxic gases.

A second important precaution is to always read the directions before using a new product. Some products should not be used in a small confined space to avoid inhaling dangerous vapors. Other products should not be used without gloves and eye protection to help prevent the chemical from touching your body. Read and follow the directions.

Another effective way to protect yourself and your family is to store chemical products properly. Non-food products should be stored tightly closed in their original containers so you can always identify the contents of each container and how to properly use the product.

Never smoke while using household chemicals. Don't use hair spray, cleaning solutions, paint products, or pesticides near the open flame of an appliance, pilot light, lighted candle, fireplace, wood burning stove, etc.

Although you may not be able to see or smell them, vapor particles in the air could catch fire or explode.

If you should spill a chemical, clean it up immediately with rags, being careful to protect your eyes and skin. Allow the fumes in the rags to evaporate outdoors in a safe place, then dispose of them by wrapping them in a newspaper and then placing them in a sealed plastic bag. Dispose of these materials with your trash. If you don't already have one, buy a fire extinguisher that is labeled for A, B, and C class fires and keep it handy.

Buy only as much of a chemical as you think you will use. If you have product left over, try to give it to someone who will use it. Take care to dispose of it properly. Improper disposal can result in harm to yourself or members of your family, accidentally contaminate our local water supply, or harm other people.

MAJOR CHEMICAL EMERGENCIES

Hazardous materials are chemical substances, which if released or misused, can pose a threat to the environment. These chemicals are used in industry, agriculture, medicine, research, and consumer goods. As many as 500,000 products pose physical or health hazards and can be defined as "hazardous chemicals." Each year, over 1,000 new synthetic chemicals are introduced.

What Are Major Chemical Emergencies?

Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation accidents or because of chemical accidents in manufacturing plants.

A major chemical emergency is an accident that releases a hazardous amount of a chemical into the environment. Accidents can happen underground, on railroad tracks or highways, and at manufacturing plants. These accidents sometimes result in a fire or explosion, but many times you cannot see or smell anything unusual.

Awareness Information

In the event of a major chemical emergency, you will be notified by the authorities. To get your attention, a siren could sound, you may be called by telephone, or emergency personnel may drive by and give instructions over a loudspeaker. Officials could even come to your door.

Listen carefully to the radio or television. The Emergency Alert System (EAS) may be activated. You will be given specific instructions for your particular situation. Strictly follow the instructions. Your life could depend on it. You will be told the following:

- The type of health hazard.
- The area affected.
- How to protect yourself.
- Evacuation routes (if necessary).
- Shelter locations.
- Type and location of medical facilities.
- The phone numbers to call if you need extra help.

Call EMS, 9-1-1 only for a possible life-threatening emergency. Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.

There are many organizations that help the community in an emergency, such as police, fire and sheriff departments, the American Red Cross and government agencies. In a major emergency, all these groups coordinate their activities with the Emergency Management Agency. The Fire Department has a Hazardous Materials, or HazMat Team, that is trained to respond to chemical accidents. In the event of a chemical emergency, it is very important that you follow the instructions of these highly trained professionals. They know best how to protect you and your family

Develop a Family Disaster Plan

Learn about your community's risk from major chemical emergencies. Contact the Chatham Emergency Management Agency for information on chemical plants and hazardous material transportation routes in your area.

Find out evacuation plans for your workplace and your children's schools. Different locations have different plans. Know where you or your children may be taken in the event of a major chemical emergency.

Develop an evacuation plan. Everyone in your family should know where to go if they have to leave. Trying to

make plans at the last minute can be upsetting and create confusion.

Learn about industry and community warning signals. Different communities may have different ways of providing warnings. Chatham County has sirens intended for outdoor warning purposes. Use a NOAA weather radio with a tone-alert feature to keep you aware of warnings while you are indoors.

Everyone should know what to do in case all family members are not together. Discussing major chemical emergencies ahead of time helps reduce fear and anxiety and lets everyone know how to respond.

Assemble a Disaster Supply Kit

Please see the Disaster Supply Kit section for general supply kit information. Hazardous Materials-specific supplies should include the Disaster Supply Kit basics as well as:

- A change of clothing for each member of the family.
- Medication, eyeglasses, hearing aids or dentures, or things like canes and walkers.
- Personal items such as toothbrushes, deodorant, etc.
- Items for your baby such as diapers, formula, or baby food.
- Books, puzzles or cards and games for entertainment.

Emergency Procedures for School Children

In an emergency, your children may be sheltered in place or evacuated from school. If protective actions are being taken at your children's school, do not go to the school. School personnel are trained to handle emergencies.

Do not call your child's school. You could tie up a phone line that is needed for emergency communications. For further information, listen to local emergency radio and

TV stations to learn when and where you can pick up your children.

What to Do If You Are At the Scene of a Chemical Accident

Call 9-1-1 to report the nature and location of the accident as soon as possible. Alerting local authorities to a major chemical emergency immediately may help reduce potential injury or damage.

Move away from the accident scene and help others away. Minimizing the time you are exposed reduces your risk of injury from breathing toxic chemicals. Some chemicals may ignite or explode.

Stay away from the spilled substance and avoid touching it. If you are not sure of a substance or its effects, wait for authorities on the scene to advise you of proper medical care or attention to minimize injury.

Try to avoid inhaling gases, fumes, or smoke. If possible, cover your mouth with a cloth while leaving the area. Many chemicals can damage breathing passages.

Stay away from accident victims until the hazardous material has been identified. Once a substance has been identified and authorities indicate it is safe to go near victims, you can move victims to fresh air and call for emergency medical care. Remove contaminated clothing and shoes and place them in a plastic bag. Cleanse victims who have come in contact with chemicals by immediately pouring cold water over the skin or eyes with running water for at least 15 minutes, unless authorities instruct you not to use water on the particular chemical involved. Minimizing your exposure will decrease potential injury.

Try to stay upstream, uphill, and upwind of the accident. Chemicals may be carried by water, gravity, or wind. Minimize your exposure.

How to Shelter-In-Place

One of the basic instructions you may be given in a chemical emergency is to shelter-in-place. This is a precaution aimed to keep you and your family safe while remaining in your home. If you are told to shelter-in-place, go inside, close all windows and vents and turn off all fans, heating or cooling systems. Take family members and pets to a safe room, seal windows and doors, and listen to local radio (or television) stations, or a NOAA Weather Radio for instructions.

- While gathering your family, you can provide a minimal amount of breathing protection by covering your mouth and nose with a damp cloth or towel especially if gas or vapors could have entered the building. Many chemicals can cause damage to breathing passages.
- Immediately after the shelter-in-place announcement is issued, fill up bathtubs or large containers for an additional water supply, and turn off the intake valve to the house. Water supplies may become contaminated. Preserve the water you have available.
- Avoid eating or drinking any food or water that may be contaminated. Injury may occur from eating or drinking toxic chemicals.
- Seal the house so contaminants cannot enter:
- Close and lock all windows and doors in your home.
- Turn off all fans, heating and air conditioning systems.
- Close the fireplace damper.
- Seal gaps and cracks under doorways with wet towels and seal gaps around window and air conditioning units, bathroom and kitchen exhaust fans, and stove and dryer vents with duct tape and plastic sheeting, wax paper, or aluminum wrap. Close

nonessential rooms such as storage areas, laundry rooms, and extra bedrooms.

- Turn off ventilation systems.
- Go to an above ground room with the fewest windows and doors.
- Take your Disaster Supply Kit with you. These items may make you more comfortable while you are waiting for further instructions.
- Stay in the room and listen to your radio or television until you are told all is safe, or you are told to evacuate. Local officials may call for evacuation in specific areas at greatest risk in your community. Following the advice of local authorities is your safest choice.
- If you are told there is danger of explosion, close the window shades, blinds, or curtains. To avoid injury, stay away from the windows. If windows break due to the explosion, the shades will help prevent glass from shattering into your home.

Evacuation for a Major Chemical Emergency

Authorities may decide to evacuate an area for your protection. Again, it is important to stay calm, listen carefully and follow all instructions. If you are told to evacuate, listen to your radio to make sure the evacuation order applies to you and to understand if you are to evacuate immediately or if you have time to pack some essentials. Do not use your telephone.

Avoid using the telephone. Use your phone only in life-threatening emergencies, and then call 9-1-1 immediately. Telephone lines are frequently overwhelmed in disaster situations and need to be clear for emergency calls.

If you are told to evacuate immediately, take your Disaster Supply Kit. Local officials may call for evacuation in specific areas at greatest risk in your community. Following the advice of local authorities is your safest protection. Leave your home quickly. Follow the route

authorities recommend. Don't take shortcuts on the way to the shelter, they may be blocked or expose you to dangerous chemicals.

It is important to stay calm, listen carefully, and follow all instructions. Authorities will decide if evacuation is necessary, based primarily on the type and amount of chemical released and how long it is expected to affect an area. Other considerations are the length of time it should take to evacuate the area, weather conditions, and the time of day. Authorities will advise you of the safest steps to take for your particular situation.

If an evacuation order is issued, listen to your radio to make sure it applies to you, and to understand if you are to evacuate immediately or if you have time to pack some essentials. Stay tuned to a radio or television for information on evacuation routes, temporary shelters and procedures. Always follow the advice of local authorities.

If you are told to evacuate, do so immediately.

- Only if you have time, seal your house so contaminants cannot enter:
- Shut off all vents.
- Close fireplace dampers.
- You don't need to turn off your refrigerator or freezer, but you should turn off all other appliances and lights as you leave.
- Close and lock your windows and doors.
- Move quickly and calmly. Leaving the area as quickly as possible will reduce your chance of exposure to hazardous materials. Staying calm and rational will help you move safely and avoid delays or accidents caused by irrational behavior.
- Do not assume that a shelter will have everything you need. While shelters provide a safe place to stay and food, specialty items for infants and individuals on restricted diets may not be available. In most major chemical emergencies, shelters will provide only emergency items such as meals, cots, and blankets.

- If you need a ride, ask a neighbor. If no neighbor is available to help you, listen to local radio or television stations for further instructions.
- Check on neighbors to make sure they have been notified, and offer help to those with disabilities or other special needs. Elderly people and people with disabilities may require additional assistance, and people who care for them or who have large families may need assistance in emergency situations.
- Evacuate your pet.
- Take only one vehicle to the evacuation site. Traffic may be very heavy and parking at a shelter may be limited.
- Close your car windows and air vents, and turn off the heater or air conditioner. Many chemicals can cause damage to breathing passages.
- Follow the exact route you are told to take; shortcuts may put you in danger.

What to Do After a Major Chemical Emergency

- Return home only when authorities say it is safe. Local officials on the scene are the best source of information for your particular situation.
- Follow local instructions concerning the safety of food and water. Contaminated food or water can cause illness.
- Clean up and dispose of residue carefully. Follow instructions from emergency officials concerning cleanup methods. Local officials will best know proper procedures for your particular situation.

ANNEX A DISASTER SUPPLY KIT

After a disaster, local officials and relief workers will be on the scene, but they cannot reach everyone immediately. You could get help in hours, or it may take days. Basic services, such as electricity, gas, water, and telephones, may be cut off, or you may have to evacuate at a moment's notice. You probably won't have time to shop or search for the supplies you'll need. Your family will cope best by preparing for disaster before it strikes.

Local officials and relief workers will be on the scene, but they cannot reach everyone immediately. You could get help in hours, or it may take days you probably won't have time to shop or search for the supplies you'll need.

Awareness Information

Assembling the supplies you might need following a disaster is an important part of your Family Disaster Plan. Following a disaster, having extra supplies at home or supplies to take with you in the event of an evacuation can help your family endure evacuation or home confinement. Learn more about Disaster Supply Kits by contacting your local emergency management agency or your local American Red Cross chapter.

Involve Children in Disaster Preparedness. Ask children to help you remember to keep your kits in working order by changing the food and water every six months and replacing batteries as necessary. Children might make calendars or posters with the appropriate dates marked on them. Ask children to think of items that they would like to include in their own Disaster Supply Kit, such as books or games or appropriate nonperishable food items.

What is a Disaster Supply Kit?

There are six basics you should stock for your home: Basic, First Aid, Food, Water, Clothing and Bedding, Tools and Emergency Supplies. Keep the items that you would most likely need during an evacuation in an easy-to carry container such as:

- A large, covered trash container
- Plastic or rubber boxes
- A camping backpack
- A duffle bag

Rethink your kit and family needs at least once a year and replace batteries, update clothes, etc.

1. Basics

The following items might be needed at home or for an evacuation. Keeping them in an easy-to-carry backpack or duffel bag near your door would be best in case you need to evacuate quickly, such as flash flood or major chemical emergency. Store your kit in a convenient place known to all family members. Kit basics are:

- Wrench to turn off household gas and water. Keep it near the shut-off valves.
- A portable, battery-powered radio or television and extra batteries.
- Flashlight and extra batteries.
- First aid kit and first aid manual.
- Supply of prescription medications.
- Credit card and cash.
- Personal identification.
- An extra set of car key
- Matches in a waterproof container.
- Signal flare.
- Map of the area and phone numbers of places you could go.

2. First Aid

Include first aid kit basics in your Disaster Supply Kit and each car:

- First aid manual.
- Sterile adhesive bandages in assorted sizes.
- Assorted sizes of safety pins.
- Cleansing agent/soap.
- Latex gloves (2 pairs).
- Sunscreen.
- 2-inch sterile gauze pads (4-6).
- 4-inch sterile gauze pads (4-6).
- Triangular bandages (3).
- Nonprescription drugs.
- 2-inch sterile roller bandages (3 rolls).
- 3-inch sterile roller bandages (3 rolls).
- Scissors.
- Tweezers.
- Needle.
- Moistened towelettes.
- Antiseptic.
- Thermometer.
- Tongue depressor blades (2).
- Tube of petroleum jelly or other lubricant.

Have the following nonprescription drugs in your Disaster Supply Kit:

- Aspirin or non-aspirin pain reliever.
- Anti-diarrhea medication.
- Antacid (for stomach upset).
- Syrup of ipecac (use to induce vomiting if advised by the poison control center).
- Laxative.
- Activated charcoal (use if advised by the poison control center).
- Vitamins.

Prescription and nonprescription drugs.

Special needs for infants, elderly persons or anyone with serious allergies.

Sanitation:

- To build a makeshift toilet
 - Line a bucket with a garbage bag and make a toilet seat out of two boards placed parallel to each other across the bucket. After each use, pour a disinfectant such as bleach (1 part liquid chlorine bleach to 10 parts water) into the garbage bag. This will help avoid infection and stop the spread of disease. Cover the bucket tightly when it is not in use.
 - Bury garbage and human waste to avoid the spread of disease by rats and insects. Dig a pit two to three feet deep and at least 50 feet downhill or away from any well, spring, or water supply.
- Supplies:
 - Toilet paper, towelettes
 - Soap, liquid detergent
 - Feminine hygiene items
 - Personal hygiene items
 - Plastic garbage bags with ties (for personal sanitation use)
 - Plastic bucket with lid
 - Disinfectant
 - Household chlorine bleach
 - Facial tissues

3. Food

Even though it is unlikely that an emergency would cut off your food supply for two weeks, you should consider preparing a supply that will last that long. The easiest way to develop a two-week stockpile is to increase the amount of basic foods you normally keep on your shelves. If your water supply is limited, try to avoid foods that are high in fat and protein, and don't stock salty foods, since they will make you thirsty. Familiar foods can

lift morale and give a feeling of security in time of stress. Also, canned foods won't require cooking, water, or special preparation. Take into account your families unique needs and tastes. Try to include foods that they will enjoy and that are also high in calories, protein, carbohydrates, vitamins, and minerals.

Pack at least a three-day supply of nonperishable food and water, and store it in a handy place. You need to have these items packed and ready in case there is no time to gather food from the kitchen when disaster strikes.

Select foods that require no refrigeration, preparation, or cooking, and little or no water. Foods that are compact and lightweight are easy to store and carry. If you must heat food, pack a can of cooking fuel.

Try to eat salt-free crackers, whole grain cereals, and canned food with high liquid content. Whenever possible, use nonperishable foods and staples.

- Recommended foods include:
 - Ready-to-eat canned meats, fruits, and vegetables.
 - Canned juice, milk, and soup (if powdered, store extra water).
 - High-energy foods, such as peanut butter, jelly, crackers, granola bars, and trail mix.
 - Comfort foods, such as hard candy, sweetened cereals, candy bars, and cookies.
 - Instant coffee, tea bags.
 - Foods for infants, elderly persons, or persons on special diets, if necessary.
 - Compressed food bars. They store well, are lightweight, taste good, and are nutritious.
 - Trail mix. Available prepackaged, or assemble your own.
 - Dried foods. They can be nutritious and satisfying, but contain a lot of salt, which promotes thirst.

- Freeze-dried foods. They are tasty and lightweight, but will need water for reconstitution.
- Instant meals. Cups of noodles or cups of soup are a good addition, although they need water for reconstitution.
- Snack-sized canned goods. Good because they generally have pull-top lids or twist-open keys.
- Prepackaged beverages. Those in foil packets and foil-lined boxes are suitable because they are tightly sealed and will keep for a long time.
- Food Options To Avoid
 - Commercially dehydrated foods. They can require a great deal of water for reconstitution and extra effort in preparation.
 - Bottled foods. They are generally too heavy and bulky, and break easily.
 - Meal-sized canned foods. They are usually bulky and heavy.
 - Whole grains, beans, pasta. Preparation could be complicated under the circumstances of a disaster.
- If Your Electricity Goes Off
 - First, use perishable food and foods from the refrigerator. Then, use the foods from the freezer. To minimize the number of times you open the freezer door, post a list of freezer contents on it. In a well-filled, well-insulated freezer, foods will usually still have ice crystals in their centers (meaning foods are safe to eat) for at least three days.
 - Remember to store nonperishable foods for your pets.

4. Water

Store water in plastic containers such as soft drink bottles. Avoid using containers that will decompose or break, such as milk cartons or glass bottles. A normally active person needs to drink at least two quarts of water each day. Hot environments and intense physical activity

can double that amount. Children, nursing mothers, and ill people will need more.

- Store one gallon of water per person per day.
- Keep at least a three-day supply of water per person: two quarts for drinking, two quarts for each person in your household for food preparation/sanitation.

Water Purification:

Wells at undamaged homes should be safe, unless affected by a fuel spill. If you are in doubt of water safety, contact your local public health officials. If your house was damaged, disinfect and test water before consumption. The water system may have become contaminated with bacteria due to loss of water pressure in the plumbing.

If you use water from a public well, have a water sample collected and tested before allowing the water to be consumed. Water may have been contaminated with bacteria due to a loss of water pressure in the plumbing.

Store water in plastic containers, such as soft drink plastic bottles. Seal containers tightly, label them and store in a cool, dark place. Replace water every six months. Avoid using containers that will decompose or break, such as milk cartons or glass bottles.

Keep at least a three-day supply of water, or a minimum of three gallons per person. It is strongly recommended to have more if possible. Use one-half gallon per day for drinking, and one-half gallon for cooking and sanitation. A normally active person needs to drink at least two quarts of water each day. Hot environments and intense physical activity can double that amount. Children, nursing mothers, and ill people will need more. Store your three-day supply in a handy place. You need to have water packed and ready in case there is no time to fill water bottles when disaster strikes.

Water needs to be treated only if it is of questionable purity. Boiling is the safest method of treating water. Strain water through a clean cloth to remove bulk impurities. Bring water to a rolling boil for about one full minute, keeping in mind that some water will evaporate. Let the water cool before drinking. Boiled water will taste better if you put oxygen back into it by pouring the water back and forth between two clean containers. This will also improve the taste of stored water.

You can use household liquid bleach to kill microorganisms. Use only regular household liquid bleach that contains 5.25 percent sodium hypochlorite. Do not use scented bleaches, color-safe bleaches, or bleaches with added cleaners. Add 16 drops of bleach per gallon of water, stir, and let stand for 30 minutes. If the water does not have a slight bleach odor, repeat the dosage and let stand another 15 minutes. If it still does not smell of chlorine, discard it and find another source of water. Other chemicals, such as iodine or water treatment products sold in camping or surplus stores that do not contain 5.25 percent hypochlorite as the only active ingredient, should not be used.

Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt or other solid impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang upright when the lid is upside down (make sure the cup is not touching the water) and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled. Melt ice cubes or use water from undamaged hot water tanks, toilet tanks (not the bowl), and water pipes if you need additional water.

If you need to find water outside of your home, use rainwater; streams, rivers, and other moving bodies of water; ponds, lakes; and natural springs. If you question its purity, treat the water first. Avoid water with floating

material, an odor, or a dark color. Use saltwater only if you distill it first. Do not drink floodwater.

5. Clothing and Bedding

Include at least one complete change of clothing and footwear per person.

- Sturdy shoes or work boots
- Rain gear
- Blankets or sleeping bags for each family member
- Hat and gloves
- Thermal underwear
- Sunglasses
- Special Items

6. Tools and Emergency Supplies

- Mess kits, or paper cups, plates, and plastic utensils
- Emergency preparedness manual
- Battery-operated radio and extra batteries
- Flashlight and extra batteries
- Cash or traveler's checks, change
- Non-electric can opener, utility knife
- Fire extinguisher: small canister ABC type
- Tube tent
- Pliers
- Tape
- Compass
- Matches in a waterproof container
- Aluminum foil
- Plastic storage containers
- Signal flare
- Paper, pencil
- Needles, thread
- Medicine dropper
- Shut-off wrench, to turn off household gas and water
- Whistle
- Plastic sheeting
- Map of the area (for locating shelters)

ANNEX B EVACUATION

Evacuation Supply Kit

Place in an easy-to-carry container the supplies you would most likely need if you were to be away from home for several days. Label the container clearly. Remember to include:

- Disaster Supply Kit basics ANNEX B
- Three gallons of water per person.
- Three-day supply of nonperishable food.
- Kitchen accessories: manual can opener; mess kits or paper cups, plates, and plastic/disposable utensils; utility knife; a can of cooking fuel if food must be cooked; household liquid bleach to treat drinking water; sugar, salt, pepper; aluminum foil; plastic resealable bags.
- One complete change of clothing and footwear for each family member, sturdy shoes or work-boots, raingear, hat and gloves, thermal underwear, sunglasses.
- Blankets or sleeping bag for each family member.
- Tools and other accessories: paper, pencil; needles and thread; pliers, shut-off wrench, shovels; tape; medicine dropper; whistle; plastic sheeting; small canister,
- A-B-C-type fire extinguisher; emergency preparedness manual; tube tent; compass.
- Sanitation and hygiene items: toilet paper, towelettes; soap, hand sanitizer, liquid detergent; feminine supplies; personal items such as shampoo, deodorant, toothbrushes/paste, comb and brush, lip balm; plastic garbage bags (heavy-duty) and ties (for personal sanitation uses); medium-sized plastic bucket with tight lid; disinfectant; household chlorine bleach; small shovel for digging an expedient latrine.
- Entertainment, such as games and books.
- Consider the needs of very young and older family members, such as infants and elderly or disabled persons.

- Baby formula, diapers, bottles, powdered milk, medications.
- For adults: heart and high blood pressure medication, insulin, prescription drugs, denture needs, contact lenses and supplies, extra eyeglasses, and hearing aid batteries.

Ask your physician or pharmacist about storing prescription medications. It may be difficult to obtain prescription medications during a disaster because stores may be closed or supplies may be limited.

Important Documents

Keep the following original documents in a safe deposit box if possible, and copies in a waterproof, fire-resistant portable container:

- Will, insurance policies, contracts, deeds, stocks and bonds.
- Passports, social security cards, immunization records.
- Bank account numbers.
- Credit card account numbers and companies.
- Inventory of valuable household goods, important telephone numbers.
- Family records (birth, marriage, death certificates).

Portable Or Car Evacuation Supply Kit

Keep a smaller Disaster Supply Kit in the trunk of each car. If you become stranded or are not able to return home, having some items will help you to be more comfortable until help arrives. Keep items in airtight plastic bags to help protect them from damage or spoiling and use an easy-to-carry container for the supplies you would most likely need for an evacuation. Label it clearly.

- Possible containers include:
 - A large, covered trash container.
 - A camping backpack.
 - A duffel bag.

- A cargo container that will fit on the roof of your vehicle.
- Items:
 - Several Blankets
 - Extra set of gloves, wool socks and cap
 - Jumper cables and instructions
 - Small bag of sand or kitty litter for traction
 - Small shovel
 - Tire chains or traction mats
 - Red cloth for use as a “Help” flag
 - CB radio or cellular telephone
 - Emergency information list
 - Flashlight
 - Whistle or noisemaker
 - Water
 - Extra medications and copies of prescriptions
 - Extra eyeglasses
 - Hearing Aid
 - Sanitary supplies
 - Pad and pencil

ANNEX C

RISK REDUCTION

In order to make sure you're financially prepared to deal with a natural disaster and protect your property, take the following actions to reduce your risk:

- Conduct a household inventory. Proving what you owned can help ensure a fair insurance settlement.
- Buy insurance, without it, you risk losing much more than just your possessions.
- Where to keep cash: emergency funds and access to cash can keep you afloat.
- Use an evacuation box to keep valuables and important papers.
- Some disasters allow you time to gather your most valuable goods.

Natural or other disasters can strike suddenly, at any time and anywhere. Your first priority, of course, would be to protect your family and your property. But it's also important to protect against the financial consequences of a disaster.

A disaster can damage or destroy your property, force you to temporarily live somewhere else, cut the flow of wages and other income, or ruin valuable financial records.

This guide has been prepared to help you cushion yourself against the financial blow of a disaster and to help you regain much of your pre-disaster financial health as quickly as possible. Listed here are some simple, common sense steps you can take now. Before you take any actions, however, you should be sure you have involved your family or friends whenever possible in decision making and planning. You also may want the assistance of an advisor, such as a Certified Financial Planner® licensee, insurance agent or similar financial professional. The important thing is to begin planning now, before the unexpected becomes a harsh reality.

Protect your Property

One of the first things to do is find out what disasters could strike where you live—fire, flood, hurricane or tornado, for example. The following steps can help you avoid or substantially reduce the potential physical destruction to your property if you were to be hit with a disaster. These steps can also reduce your insurance costs. For example, you could:

- Install smoke detectors to warn of an apartment or home fire.
- Elevate utilities to upper floor or attic.
- Clear surrounding brush to protect your home against wildfires.
- Anchor your house to the foundation and anchor the roof to the main frame.
- Install hurricane shutters on windows, and prepare plywood covers for glass doors.
- Cover windows, turn off utilities, or move possessions to a safer location if you have adequate warning of something like a hurricane or flood.
- If your home is in a high-risk flood area or threatened by coastal erosion, consider relocating.
- Have your house inspected by a building inspector or architect to find out what structural improvements could prevent or reduce major damage from disasters.

If you haven't yet bought a house, you might take construction type into account. Frame houses tend to withstand some disasters, while brick homes hold up better in others. If you're not sure where to start, you could contact your local fire department if you live in wildfire country. Fire departments will often make house calls to evaluate your property and make suggestions on how to improve safety. The local utility can be called upon to come to your location and show you how and where to shut off gas lines or how to elevate utilities to get them above a possible flood.

Conduct a Household Inventory

Inventory your household possessions by making a list of everything you own. If disaster strikes, this list could:

- Help you prove the value of what you owned if those possessions are damaged or destroyed.
- Make it more likely you'll receive a fast, fair payment from your insurance company for your losses.
- Provide documentation for tax deductions you claim for your losses.

To Conduct a Thorough Home Inventory:

- Record the location of the originals of all important financial and family documents, such as birth and marriage certificates, wills, deeds, tax returns, insurance policies, and stock and bond certificates.
- Keep the originals in a safe place and store copies elsewhere. You'll need accessible records for tax and insurance purposes.
- Make a visual or written record of your possessions. If you don't own a camera or videotaping equipment and can't borrow or rent it, buy an inventory booklet and fill it out, or make a simple list on notebook paper. Ask your insurance agent if he or she can provide one.
- Go from room to room. Describe each item, when you bought it, and how much it cost. If you're photographing or videotaping, have someone open closet doors and hold up items. Record model and serial numbers.
- Include less expensive items, such as bath towels and clothes. Their costs add up if you have to replace them.
- Be sure you include items in your attic, basement, and garage.
- Note the quality of building materials, particularly for such furnishings as oak doors or expensive plumbing fixtures.
- Photograph the exterior of your home. Include the landscaping—that big tree in the front yard may not be

insurable, but it does increase the value of your property for tax purposes.

- Make special note of any improvements, such as a patio, fencing, or outbuildings.
- Photograph cars, boats, and recreational vehicles.
- Make copies of receipts and canceled checks for more valuable items.
- Get professional appraisals of jewelry, collectibles, artwork, or other items that are difficult to value. Update the appraisals every two to three years. Update your inventory list annually.

Sound like too much work? Computer software programs designed for such purposes can make the task much easier. These programs are readily available in local computer stores.

Most important, once you have completed your inventory, leave a copy with relatives or friends, or in a safe deposit box. Don't leave your only copy at home, where it might be destroyed.

Buy Insurance

Even with adequate time to prepare for a disaster, you still may suffer significant, unavoidable damage to your property. That's when insurance for renters or homeowners can be a big help. Yet, many people affected by recent disasters have been underinsured-or worse-not insured at all. Homeowners insurance doesn't cover floods and some other major disasters. Make sure you buy the insurance you need to protect against the perils you face.

If You Own A Home:

- Buy, at a minimum, full replacement or replacement cost coverage. This means the structure can be replaced up to the limits specified in the policy. Investigate buying a guaranteed replacement cost policy. When and where available, these policies can

pay to rebuild your house, including improvements, at today's prices, regardless of the limits of the policy.

- Have your home periodically reappraised to be sure the policy reflects the real replacement cost.
- Update the policy to include any home improvements, such as basement refinishing. Annual automatic increases may not be enough to cover these.
- Buy a policy that covers the replacement cost of your possessions. Standard coverage only pays for the actual cash value, replacement cost discounted for age or use.
- Be very clear about what the policy will and will not cover, and how the deductibles work (the part you pay before the policy pays).
- Check state-operated or federally operated insurance pools if you find it difficult to obtain private coverage because of a recent disaster. Premiums often run higher than market rates, but this is better than no coverage.
- Use your home inventory list to check that your policy's coverage matches the value of your possessions.

If You Rent:

- If you are renting, consider locating outside a high-risk flood area.
- Buy renter's insurance, which pays for damaged, destroyed, or stolen personal property. Your landlord's insurance won't cover damage to or loss of your possessions. Also, consider special coverage like flood insurance for your belongings.
- Be clear about what a policy will cover. Some policies cover more than others. For example, will the policy pay for living expenses if you have to live somewhere else temporarily, or for damage from sewer backup?
- Comparison shop for the best coverage at the best price. Other than government flood insurance, policies vary from company to company. Policies in most areas are very affordable. Start with the company that insures your car. Discounts are often

available if you carry more than one policy with a company.

If You Are Moving

Select a home that is not in a flood area or at risk from costal erosion.

Consider special coverage

- Insurance for renters and homeowners won't cover certain types of losses. Ask your insurance agent or financial planner about special or additional coverage for the following:
- Floods. Homeowner policies don't cover damage from flooding. Call your current insurance company or agent first about getting coverage. If your company doesn't provide flood insurance, call the National Flood Insurance Program at (800) 427-4661, which can provide you with the name of an agent in your area who writes flood insurance. As of 1997, the average premium is \$300 a year for \$98,000 of coverage.
- Home offices. Some policies automatically extend coverage to computer equipment and a few other items of business property. Talk to your agent to determine what items would or would not be covered. If necessary, you could buy additional business coverage at a modest cost. Or it may be better to buy a separate small business policy, which would also provide more coverage.
- Building codes. Ask your agent about additional insurance to cover the costs of meeting new, stricter building codes. Frequently, after a disaster people get socked with rebuilding costs that are much higher because building codes have changed. All current codes must be met when rebuilding. Consider additional structural improvements that provide more protection.

- Other potential problems. This would include problems such as underground mines (located beneath your property) sewer backup, or mudslides.
- Big-ticket items. Purchase additional coverage for specific jewelry, collectibles, artwork, furs, or other big-ticket items.

Where to Keep Cash

After a disaster, you may need cash for the first few days, or even several weeks. Income may stop if you can't work. To help stay solvent, consider the following:

- Keep a small amount of cash or traveler's checks at home in a place where you can get at it quickly in case of a sudden evacuation. A disaster can shut down local ATMs and banks. The money should be in small denominations for easier use.
- Set aside money in an emergency fund. That can be tough to do on a tight budget, but it can be well worth the effort. The fund can be very helpful, not only in a disaster, but in other financial crises, such as during unemployment or when unexpected expenses like legal fees arise. Keep your emergency funds in a safe, easily accessible account, such as a passbook savings account or a money market account. Keep some funds outside the local area, since the disaster that affects you could also affect your local financial institutions. A mutual fund money market account in another city or state is one option to consider. Keep your credit cards paid off. You may have to draw on them to tide you over.

Use an Evacuation Box

Buy a lockable, durable "evacuation box" to grab in the event of an emergency. Even a cardboard box would do. Put important papers into the box in sealed, waterproof plastic bags. Store the box in your home where you can get to it easily. Keep this box with you at all times, don't

leave it in your unattended car. The box should be large enough to carry:

- A small amount of traveler's checks or cash and a few rolls of quarters.
- Negatives for irreplaceable personal photographs, protected in plastic sleeves.
- A list of emergency contacts that includes doctors, financial advisors, clergy, reputable repair contractors, and family members who live outside your area.
- Copies of important prescriptions for medicines and eyeglasses, and copies of children's immunization records.
- Health, dental, or prescription insurance cards or information.
- Copies of your auto, flood, renter's, or homeowners insurance policies (or at least policy numbers) and a list of insurance company telephone numbers.
- Copies of other important financial and family records (or at least a list of their locations). These would include deeds, titles, wills, a letter of instructions, birth and marriage certificates, passports, relevant employee benefits documents, the first two pages of the previous year's federal and state income tax returns, etc.

Originals, other than wills, should be kept in a safe deposit box or at another location.

- Backups of computerized financial records.
- A list of bank accounts, loans, credit cards, driver's licenses, investment accounts (brokerage and mutual funds), and Social Security numbers.
- Safe deposit box key.

Rent a Safe Deposit Box

Safe deposit boxes are invaluable for protecting originals of important papers. If you don't have a safe deposit box, keep copies in your evacuation box or with family or friends. But, remember, safe deposit boxes are not

necessarily waterproof. Important documents should be evacuated with you in the event of a hurricane or sent to a secure area by messenger or registered mail.

Original documents to store in a safe deposit box include:

- Deeds, titles, and ownership records for your home, autos,
- RVs, boats, etc.
- Birth certificates and naturalization papers.
- Marriage license/divorce papers and child custody papers.
- Passports and military/veteran papers.
- Appraisals of expensive jewelry and heirlooms.
- Certificates for stocks, bonds, and other investments.
- Trust agreements.
- Living wills, powers of attorney, and health care powers of attorney.
- Insurance policies (copies are sufficient).
- Home improvement records.
- Household inventory documentation.

Generally, originals of wills should not be kept in a safe deposit box since the box may be sealed temporarily after death. Keep originals of wills with your local registrar of wills or your attorney.

Deciding on a safe and convenient location is an issue. Consider renting a safe deposit box in a bank far enough away from your home so it is not likely to be affected by the same disaster that strikes your home, for instance, bank vaults have been flooded. Keep the key to the safe deposit box in your evacuation box.

Home Safes and Fire Boxes

Safes and fireboxes can be convenient places to store important papers. However, some disasters, such as hurricanes, floods or tornadoes, could destroy your home. Usually, it's better to store original papers in a safe

deposit box or at another location well away from your home.

If You Have Time

Some disasters such as floods or hurricanes, may allow time to prepare. If there is time, you could take the following actions:

- Decide what household items you would put on a very short priority list; imagine you could take only one suitcase or pack a single carload. What would you take?
- Jewelry and other small valuables.
- Irreplaceable heirlooms, mementos, and photos. Don't bother with replaceable items such as televisions, furniture, computers, and clothing (except what you need to wear for a few days). Be sure, however, to take a battery-powered radio and spare batteries so you can stay informed.
- Important papers and computer disks.